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CONCEPTUALISING DIGITAL NOMADIC PRACTICE:

EVIDENCE FROM A TECHNOLOGY-INTENSIVE FIRM

RADOSLAVA KADNAROVA

THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE

DEGREE OF

DOCTOR OF PHILOSOPHY

UNIVERSITY OF WARWICK, WARWICK BUSINESS SCHOOL

FEBRUARY 2016

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ACKNOWLEDGMENTS

This thesis was accomplished with the support of several people throughout the PhD who helped me to complete this journey.

First and foremost, I would like to acknowledge my supervisors Dr. Joao Baptista and Dr. Jimmy Huang, for providing access to depth and breadth of their knowledge and expertise. Thank you for your guidance, encouragement, commitment and continuous support that helped me to complete this thesis. I would like to thank to Prof. Julia Kotlarsky, who helped me in the early stages of this journey, and influenced my thinking and dissertation framing. I am also grateful to the academics in the ISM Group who gave me a continuous feedback on my work.

I would like to recognise the research company, under the acronym Redco. Specifically I would like to thank to Pete Hall, who was the gatekeeper and provided the access to the company and the participants. I would like to thank to the interviewees who participated in the data collection process and shared their insights with me.

Last, but most important, I would like to thank to my parents, grandma and my friends (you know who you are) for the constant support, no matter the distance. Without your encouragement none of this would have been possible.

DECLARATION AND INCLUSION OF MATERIALS FROM A PRIOR THESIS

This thesis is submitted to the University of Warwick in support of my application for the degree of Doctor of Philosophy. It has been composed by myself and has not been submitted in any previous applications for any degree. The author of this thesis carried out all the work presented here, including the data collection and analysis.

Parts of this thesis have been presented at the academic conferences during the PhD programme. Appendix C includes the abstracts of these articles.

Conference Papers

Kadnarova, R. Baptista, J. Kotlarsky, J. Lloyd, S. (2012). Media choice in modern organisations: Understanding the use of synchronous media for communication in a global IT company. ECIS Barcelona 2012.

Kadnarova, R. Baptista, J. Huang, J. (2014). How does connectivity happen? A study of technological affordances in a multinational IT organisation. EGOS Rotterdam 2014.

ABSTRACT

This thesis studies how individuals use digital media to manage connectivity and accomplish work across digital and physical spaces in modern organisations, ultimately conceptualising this new type of work as a new *digital nomadic practice*.

Increased digitisation and the need for more flexible work styles have pressured organisations to adopt new digital media and to redesign their workplaces. Existing research provides some theoretical understanding of this phenomena, however it is scattered across multiple disciplines and lack a broader all-encompassing view of the concept. This study addresses this gap with deeper and more holistic theoretical engagement in order to better capture and explain new work practices within organisations today. Exploring the salient aspects of digital nomadic practices, the study builds on the emergent literature on connectivity to understand the ways and means of staying connected. It also draws on the technology adoption and affordance literature to review how individuals use the capabilities of multiple digital media that provide the potential for a particular action. Overall the study aims to i) understand how individuals conduct their work practices in physical and digital spaces, ii) identify how individuals use digital media to stay connected, and iii) understand how individuals manage connectivity.

It draws on a single case study of a multinational IT organisation in the UK. The research follows a qualitative approach and inductively driven strategy. The study focuses on the dimensions of connectivity, digital media use, and follows digital nomad's work *'within and between'* the digital and physical spaces.

The findings of this exploratory case study show that digital nomads use the new digital media in a way it precluded them from being overly connected and allowed them to manage connectivity across multiple, *operational, social and organisational* levels. It identified the digital media choice by drawing on a theory of nested affordances in order to capture media choice in a dynamic way, which happens at different levels, as digital media coexist together and provide combination of various affordances.

These findings contribute to knowledge of how individuals choose digital media to manage their connectivity in digital and physical spaces, and particularly inform the study of digital media adoption and technological affordances

.

1 INTRODUCTION

1.1 Background and motivation to research

In the context of digital media, the recent statistics from 2011 show, 50 billion devices of various types will be connected by 2020 (Evans, 2011), which is creating an ecosystem of connective digital media (van Dijck, 2013). This increase in digital media support 'virtual', 'networked' and ultimately 'connected' ways of working (Contractor, Monge and Leonardi, 2011; Woolgar, 2002; Castells, 2007); by ensuring that employees have:

> *"the right access devices, an appropriate communications infrastructure, the necessary business applications, a team-oriented workplace environment, and an overarching digital security umbrella"* (Shedadi, Vollmer and Karam, 2013, p. 3).

There have been constant advances in digital media that permit employees to be connected across the time and space (Ortiz de Guinea and Markus, 2009). Over the past two decades the IS research has paid attention to the changing work practices, which disassociates work activity from a physical place, named nomadic work (Kleinrock, 1996; Su and Mark, 2008; Kietzmann et al., 2013; Makimoto and Manners, 1997). It has emerged as a result of increasing growth in wireless communications and ubiquitous computing or miniaturisation of devices (Kleinrock, 2001). One of the characteristics of this type of work, apart from a work practice that can be represented digitally and accomplished from any location (Davis, 2002; Ciolfi and de Carvalho, 2014), is the change how individuals work together. More recently the introduction of social media reshaped how employees access, store, manipulate and share information (Leonardi, 2013, Huang, Baptista and Galliers, 2013; McAfee, 2009).

These digital media based on social media features consist of blogs, wikis, social networking sites, micro blogs or social tagging tools that are often integrated in one platform, and afford more transparent and convenient way of working (Treem and Leonardi, 2012; Kietzmann et al., 2011). Further, they add a social element to a conversation compared to the traditional digital media (e.g email or IM), enabling more personal connections to colleagues and information (van Dijck, 2013; Kietzmann et al., 2011). Studying social media was mainly attributed to scholars such as Majchrzak et al. (2013), Treem and Leonardi (2012), Leonardi

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(2013) who have provided elaborate explanations of social media affordances and how they increase socialisation and knowledge sharing within and across organisations. The concept of affordances is based on the idea that the technology creates an opportunity for actions that emerges from the user interacting with the technology (Faraj and Azad, 2012). Affordances allow researchers to be relatively open to different uses and consequences of digital media (Gibson, 1986). Additionally, the consequences of digital media and mainly the focus on connectivity shaped a domain of research that studies digital media in relation to work, and taking this angle pressures scholars studying the wider IT adoption to re-think the current research, and to theorise about new digital media that are used simultaneously within organisations (Bradner, 2013; Leonardi, 2015).

Using digital media in conjunction is rendering the media choice and users practices, which will be explained through the concept of nested affordances, because several affordances are used at the same time and individuals no longer rely on one medium (Bélanger and Watson-Manheim 2006, Stephens et al. 2008, Woerner et al. 2004). Since employees often use various digital media simultaneously (Stephens et al. 2008, Turner and Reinsch 2007, Watson-Manheim and Bélanger 2007), it has caused speeding up work activities, intensification of work or lengthening of workdays (Wajcman et al., 2011), and individuals might feel overloaded by communication and information (Dabbish and Kraut 2006, Donabedian 2006; Mazmanian et al. 2005, Munkejord 2007).

In this thesis, I will argue that a new practice is evolving that I call *digital nomadic practice*, which will be elaborated on throughout this thesis. Further, Section 1.2 states the research aims and objectives. It follows with Section 1.3 that highlights the research gap of this study. The outline of the thesis is presented in Section 1.4, which summarises each chapter of this thesis. After this introductory chapter I will present the review of the literature that is focused on nomadic work, connectivity, physical workspace and technology affordances.

1.2 Research aims

The aim of this thesis is to understand a new practice within an organisational setting, which I term *digital nomadic practice.* In order to conceptualise this practice, it requires challenging and critically analysing the current literature on the nomadic work, technology adoption and affordances with the focus on connectivity. This thesis provides a unique opportunity to

connect these various research angles in a holistic way, as the findings are often inconclusive, requiring deeper engagement with explanations to accurately reflect the work practices within the organisational context.

Based on the aims of this research, the next section highlights the research gap and the research questions that will be filled in this study.

1.3 Research gap and research questions

Various research disciplines such as Computer Science, Information Systems or Computer-Supported Collaborative Work focused on combination of movement, time and technology and there is growing and emerging number of researchers who engaged in the study of mobile and ubiquitous communication (e.g Katz and Aakhus, 2002; Ling, 2008; Kakihara and Sorensen, 2002). This research on mobile communication is related to the nomadic work as it is technology that enabled this type of work behaviour (Lyytinen, 2002). The emphasis of the previous research was to explore particular professions of individuals (e.g postman, flight attendant, salesman) and their nomadic movements outside of the organisational setting. However, rather than focusing on the aspects of movements between places, this study takes into consideration newer digital media, and its impact on work practice of individuals within an organisational setting.

The wider IS technology adoption literature implied that the current studies mainly examined a single use of digital media, however we are seeing that multiple digital media are used simultaneously, which is becoming more common within an organisational setting (Leonardi, 2012). Previously, the simultaneous digital media use was linked to multi-tasking or simultaneous pairing studied by researchers such as Bélanger and Watson-Manheim (2006) Stephens et al. (2008) Barley, Meyerson and Grodal (2010). The aforementioned researchers showed how to pair digital media in order to achieve the desired communication outcome. In response to the modern organisational context, few studies have been recently published indicating that using multiple media is a common occurrence among individuals, which is implying that individuals are not choosing between two possible media rather it is the combination of digital media that is helping them to achieve their communication goal (e.g Leonardi, 2012; Jung, 2012). However, there is still a lack of studies that would uncover this plurality of digital media, and most of the research relies on the traditional theories of media

choice that have been used for the past decade. The previous media choice theories (e.g Daft and Lengl, 1986; Cambell, 2006; Dennis and Valacich, 1999) were commonly used to understand the choice of email, videoconferencing or instant messenger (Schmitz and Fulk, 1991). However, they are not suitable for this changing media landscape, and especially to assess the use of social media tools.

In particular, media richness theories are losing its power in relation to new digital media that have emerged and are now widely adopted within an organizational setting, which allow for new types of interactions through emoticons, status updates or video sharing (Kaplan and Haenlein, 2010). These theories were mainly used to test the effectiveness of a digital medium and to replicate this prediction across various settings (e.g. Schmitz and Fulk, 1991; Rice, 1992; Carlson and Zmud, 1999). Hence, the results have been contradictory. Also, questions of how does media choice happens in a modern organisational setting and how individuals enact various affordances remain a significant challenge (Schmitz and Fulk, 1991; Fulk, 1993; Fulk et al., 1995; Vandenbosch and Higgins, 1995; Warkentin and Beranek, 1999).

Yet, with my first research sub-question I aim to address this challenge in explaining digital media choice and in particular taking the plurality of digital media into account.

> *i) How do individuals simultaneously use multiple digital media to conduct their work practice?*

The literature in IS and organisational studies analysed the consequences of ICT use, and stated that apart from enabling nomadic work, it can possibly lead to disruptive outcomes by making individuals over-connected. Hence, connectivity was captured as a paradox (Fonner and Roloff, 2012; Leonardi, Treem and Jackson, 2010), impacting positively by making employees more flexible and effective, giving them access to more and better information; but also negatively, by creating disruptions in their workflow (Mazmanian, 2013).

Although, the recent studies have speculated on the intended benefits and unintended consequences associated with connectivity in relation to nomadic work (Wajcman and Rose, 2011; Fonner and Roloff, 2012); the current studies lack in knowledge of how individuals manage and cope with what has been described as being 'constantly' or 'always' connected (Wajcman and Rose, 2011; Kolb, Collins and Lind, 2008; Dery and MacCormick, 2012). However, despite the importance of connectivity, it is still a novel concept and there are lack of

empirical studies conceptualising it (Kolb, Caza and Collins, 2012). In particular, it is important to assess whether constant connectivity afforded by digital media leads to constant interruptions, considering that the nature of knowledge work is changing. Further, employees should not be seen as passive of these interruptions, which calls for further understanding how employees manipulate and use digital media. Therefore, there are more studies needed that beyond the understanding of how employees respond to alters notifying incoming communication and manage their connectivity (Mazmanian, Orlikowski and Yates, 2013; Wajcman et al., 2010; Boudreau and Robey, 2005).

The second research sub-question captures this gap associated with understanding connectivity and interruptions within the organisational setting, and how employees use digital media in a way to manage connectivity without being interrupted.

> *ii) How do individuals use digital media in order to manage connectivity and minimise interruptions?*

The work interactions are occurring in digital spaces within the nomadic environment, but researchers stress the importance of in-person interactions, as they are necessary for building trust and establishing interpersonal relationships, and are essential for teamwork (Jarvenpaa, 2007; Kotlarsky, 2005). In particular, in the case of nomadic environment, studies have mainly focused on the need of a technology to convey certain presence in order to replicate the in person interactions and offer equivalent outcomes (Su and Mark, 2008). Hence, researchers have mainly compared interactions occurring in digital and physical spaces; but how these spaces complement and influence each other remains unexplored. There is a paucity of research examining the role of physical setting in relation to nomadic work, as it is assumed to be a practice without reliance on a physical space (Kleinrock, 1996; Su and Mark, 2008; Liegl, 2014). Further, Braham and Hale (2007) stated that the analysis of new ways of working includes the work conducted in both spaces - physical and digital, and he continues:

> *"moving physically while keeping the networking connection to everything we do is a new realm of the human adventure, on which we know little"* (ibid, p. 425)

The third research sub-question aims to fill the gap by stating the importance of physical and digital space in conducting digital nomadic practice (e.g Liegl, 2015; Fayard, 2007).

iii) How do individuals manage the intersection between digital and physical spaces?

With these sub- questions I respond to Lyytinen and Yoo's (2002) call for researchers to combine technological, social and organisational elements in the analysis of nomadic environments. Hence, the main research question aims to shed light on digital nomadic practice and to connect discussions that have so far remained isolated, but have substantive bearing on digital nomadic practice, specifically, connectivity, the simultaneous use of digital media, and work conducted in digital and physical spaces. The main research question is as follows:

How does the digital nomadic practice emerge within modern organisational setting?

The next section describes the research setting where the research has been conducted and explains the research process.

1.4 Research context

To answer the main research question and the sub-questions, the case study used in this research was oriented towards a multinational IT organisation with offices in London. The company went through the change of implementing enterprise social media platform with adopting policies that were oriented towards more flexible type of working. This type of setting was ideal because the company is a worldwide leader in creating technologies for connecting, collaborating and communicating of employees and these technologies were used internally. This case was an extreme case of an organisation where the technologies worked well, and there it was an unusual success.

The data collection took over three-month period, and the data collected was based on 37 interviews of individuals from various positions within the company. These employees commented on the use of various digital media, and it was focused on understanding the 'digital nomadic strategy' that the company implemented. The interviews were supported with observations, when I spent a week in the company and shadowed 4 employees and in particular noted their everyday practices, the technology use and choice. I have also analysed several reports that the company published to find out the various features of technologies and internal company reports that outlined the flexible working policy.

In discussing these findings, I used the language of moving *'between and within'* digital spaces to show how individuals choose between various technologies. By doing so, the study shows

that various technology affordances satisfy different communication outcomes, and these affordances were nested, meaning that the affordances of digital media are grouped and relate to each other (Gaver, 1991). The affordance nesting was connected to *the content of interactions, and individuals' intentions for using the content*. In this way, I have captured digital media choice in a dynamic manner, by diverting the focus from the media-based theories and the traditional task/effectiveness choice (Daft and Lengel, 1986). To satisfy the commitment to others I have established that the connectivity has increased, however individuals found various personal strategies how to deal with being over-connected and managed their connectivity across multiple, *operational, social and organisational* levels.

These findings contribute to knowledge and practice, which are discussed in the next section.

1.5 Aspired theoretical and practical contributions

The contributions to knowledge are linked to IS research studies on nomadic work, technology adoption and affordances that emerge from these theoretical and empirical discussions in the following ways.

This thesis aims to contribute to the novel conceptualisation on nomadic work by focusing on *digital nomadic practice* with the intention to rethink the fundamental assumption underlying the nomadic research, which is the movement of individuals (Kristoffersen and Ljungberg, 1998). The purpose is to connect the various aspects - connectivity, simultaneous digital media use, and acknowledging physical spaces - to accurately reflect the work practice within an organisational context. Adopting this broader view extends the studies that call for more connection among technological, and social, and organisational elements when explaining digital nomadic environments (Lyytinen and Yoo, 2010).

I have demonstrated that the simultaneous use of digital media is a norm within an organisational setting, which is an important finding as previous studies focused on a single technology use in isolation of its relationship with other tools (Sorensen, 2011). I have extended the previous studies by analysing the media choice when plurality of digital media is available. In this way, I contribute the studies on technology adoption (Venkatesh et al. 2007) by incorporating research on media choice and technology affordances. In this way, I offered a unique perspective on how individuals perceive the affordances of digital media, which are arranged in combinations to achieve their communication goal (e.g Donabedian, 2006; King

and Xia, 1997; Watson-Manheim Bélanger, 2007; Webster and Trevino, 1995; Straub and Karahanna, 1998). Based on my research, I highlighted affordances of various digital spaces and found a new affordance of 'visualability', which reflects to a digital space where 'rich' and face-to-face contact can be replicated by allowing the collaborators to see and react to high definition, non-verbal interactions, bodily movements and facial expressions. Therefore, I add to the growing number of studies on technology affordances (Treem and Leonardi, 2012; Majchrzak et al. 2014; Faraj et al. 2011) that focus on uncovering new technology affordances associated with the new ways of working.

Consistent with recent theoretical arguments regarding the newly emerging literature on connectivity, I present the different levels of being connected - *operational, organisational, social*. This contributes to the discussion of scholars who have argued for the importance of taking connectivity seriously in studies of technology adoption (e.g Wajcman and Rose, 2011; Kolb, 2012). To date, researchers provided some valuable insights on this topic (e.g Kolb, 2008, 2012; Leonardi et al. 2010; Fonner and Rolloff, 2010); however the issue of connectivity is still an under-researched angle, and understanding how individuals manage connectivity can contribute to the research that studies work –life balance (Hisllop and Axtel, 2011), productivity (Richardson and Benbunan-Fich, 2011) or autonomy (Mazmanian, Orlikowski, Yates, 2013).

Besides the outlined theoretical contributions, this thesis also offered practical implications and contributions for management. Importantly, the rich understanding of technology use can aid IT designers to create technologies with user-friendly interfaces. Apart from this, the understanding of digital nomadic practice and how individuals manage connectivity can help organisation to implement organisational policies that would allow nomads to be flexible, but at the same time enabling them to balance their work and life. This thesis revealed that employees rely heavily on various digital media and organisations embrace their use. However, organisations need to recognise that disconnection, as indicated by some of the interviewees, might be a way of ensuring that digital nomads are effective and stay productive. Therefore, policies and regarding the use of technologies should be implemented, which could for instance, limit the use of technologies outside of the work hours, but in a way it does not burden employees and compromise their flexibility in the workplace.

The next section provides a brief summary of the chapters in this thesis.

1.6 Outline of the Thesis

This thesis consists of six chapters, including this introduction. Figure 1 provides a visualisation of the disposition of this thesis.

Chapters 1 and 2 introduce the topic and provide the background and framing of the study. The aim is to highlight the research gaps and present a conceptual framework. Chapters 3 and 4 state how the research is conducted and show the empirical component of the research. Chapters 5 and 6 present the contributions of this research in relation to the current literature and discuss future avenues and possible limitations of this thesis.

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│  Introducing and framing the    │
│            study                │
│  ┌───────────────────────────┐  │
│  │ Chapter 1: Introduction of│  │              Specified the research
│  │ the thesis and the        │  │              aims and description of
│  │ phenomenon of digital     │  │              the literature. Outlined
│  │ nomadic practice          │  │   ╱‾‾‾‾‾╲    the knowledge gap and
│  └───────────────────────────┘  │──┤ Output │─   presented the
│  ┌───────────────────────────┐  │   ╲____╱    conceptual framework
│  │ Chapter 2: Conducted      │  │
│  │ literature review and     │  │
│  │ introduction to the       │  │
│  │ conceptual framework      │  │
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┌─────────────────────────────────┐
│  Presenting the research        │
│  methodology, case and          │
│          findings               │
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│  │ Chapter 3: Insights into  │  │   ╱‾‾‾‾‾╲   Capturing the empirical
│  │ the data collection and   │  │──┤ Output │─  part of the research
│  │ analysis                  │  │   ╲____╱
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│  │ Chapter 4: Presentation of│  │
│  │ the case and interview    │  │
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│  Outlining contributions in     │
│  relation to the current        │
│  literature and concluding      │
│        the research             │
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│  │ Chapter 5: Discussion on  │  │   ╱‾‾‾‾‾╲     to the literature and
│  │ the findings in relation  │  │──┤ Output │─  presented possibilities
│  │ to literature             │  │   ╲____╱      for future research
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│  │ Chapter 6: Drawing research│ │
│  │ conclusions               │  │
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Figure 1: Disposition of the thesis

Chapter 1 describes the motivations behind changes taking place in workplaces driven by increased digitisation, connectivity and a preference for the adoption of a nomadic work style.

Chapter 2 builds a comprehensive review of the literature and focuses on what has currently been identified in helping to conceptualise digital nomadic practice. Hence, the chapter reviews the different perspectives, such as digital media affordance, connectivity and the importance of physical and digital space, and aims to identify the relations between them. These

investigations lead to the development of the research questions and provided a basis for developing a conceptual framework.

Chapter 3 describes the methodological orientation and methods undertaken in this study. The research is situated within the qualitative research paradigm, with semi-structured interviews as the main data collection, supported by observations and document analysis. The research process followed Eisenhardt's (1989) model for building theory. The chapter ends with a reflection on the possible limitations of the methodology used and considers the reflexivity and ethics of this research.

Chapter 4 presents the empirical findings obtained from a single case study in a large IT organisation. It summarises responses from 37 interviews, which are presented to support the research questions. The chapter starts with the description of the case study of Redco; it then continues with an analysis organised according to the use of digital media, connectivity management and the work accomplished in physical spaces.

Chapter 5 contains a comprehensive discussion based on the integration of ideas from previous literature and the empirical insights from Redco. This discussion explains the move *'within and between'* digital and physical spaces and how these space are becoming blurred. Also, this chapter introduces the different modes of being connected that are *operational, organisational, and social* connectivity. I will show how digital nomads manage their connectivity and also present a revised conceptual framework that aims to depict the digital nomadic practice, which is conceived as a continuum, meaning that the aforementioned dimensions (connectivity, digital and physical spaces) continuously shift and transform themselves. This shifting depends on the preferences of digital nomads, their actual practices, and the organisational culture.

Chapter 6 summarises this thesis on digital nomadic practice. It brings into prominence the contributions to theory by extending the current literature on nomadic work, connectivity, the use of new digital media and the contributions to practice related to the design of digital media. It also outlines the limitations of this study and suggests future research avenues.

The next Chapter 2 focuses on the comprehensive review of the literature.

2 NOMADIC WORK, CONNECTIVITY AND DIGITAL MEDIA USE

2.1 Introduction

As discussed in the previous Chapter 1, the traditional approaches to nomadic working do not resonate with the current work environment. In this line, this chapter provides a comprehensive literature review that spans across several research disciplines to study digital nomadic practice. I will argue that this view is enhanced to those previously discussed within the IS community that tends to narrowly focus on nomadic work based on the spatial movements of individuals. Taking such a view will help to uncover the digital nomadic practices that are focused on individuals' activities happening in physical and digital spaces. I will further argue that the IS community needs to understand how individuals use various technologies simultaneously and manage their levels of connectivity without being interrupted.

In what follows, I will firstly discuss in Section 2.2 the main aspects that are essential to the emergence of nomadic work. I will continue to elaborate on the significance of the role of place in nomadic work in Section 2.3, as the literature up to date did not pay particular attention to the activities happening in physical places. Further, Section 2.4 discusses the role of digital media within the nomadic practice. Because of the increasing growth of digital media, nomads need to constantly switch between various technologies and manage their connectivity and interruptions. Hence, the next Section 2.5 elaborates on the research on connectivity and states the current discussions within this field. To further understand how individuals use various digital media simultaneously I will continue with the discussion on technology affordances and I bring the materiality of the digital media forward as each individual uses the technology in their own way. In particular, I introduce the idea of affordance nesting which helps to uncover the features of digital media that are overlapping and used together. This will be extensively discussed in Section 2.6.

Towards the end of the chapter, I will present the research gaps in Section 2.7 that emerged from the literature review, and state how I plan to broaden the understanding of nomadic work. Additionally, Section 2.8 outlines the conceptual framing, which is based on three dimensions namely connectivity, digital media and the intersection between digital and physical spaces.

Finally, Section 2.9 concludes this chapter by showing how the digital nomadic practice combines the perspectives of technology affordances, the work being conducted at physical and digital spaces, and the use of various technologies simultaneously can extend the current literature and to better reflect the new ways of working.

2.2 The to emergence of nomadic and mobile workers

The word mobile originates from the Latin word *mōbilis*, which means "*to move.*" The Oxford dictionary describes mobile as "*capable of movement, movable, not fixed or stationary,*" and mobility is described as "*to move or be moved, and the capacity of change of place*". Mobility originates in sociology and it represents movements of individuals, things and information as well as highlighting the social implications of these movements (Urry, 2006). A 'mobility turn' emerged in the social science that was previously viewed as being static and represented individuals who were tied to a specific location (Creswell, 2011). Further, 'mobility turn' is a response to *"the importance of the systematic movements of people for work and family life, for leisure and pleasure, and for politics and protest"* (Sheller and Urry, 2006, p. 208).

Makimoto and Manners (1997) in their book 'Digital nomad' introduced an iconic character that characterises individuals of the present day. They described digital nomad as someone who moves from one place to another, can take his laptop everywhere and this allows him to work in various places. These movements can be associated with *travelling, visiting and wandering* and Kristoffersen and Ljungberg (1998) describes these as 'modality of mobilities', which have different characteristics and are further explained.

Travelling describes the process of moving from one place to another and was often associated with various professions such as pilots, postmen or sales professionals. The mobility was inherent in the practice itself (Sørensen et al., 2008; Cousins and Robey, 2003; Lyytinen and Yoo, 2002) and it can include those who commute regularly to their workplace.

Wandering is an activity based on localised mobility. For instance, it happens when employees wander around the office to see colleagues face-to-face to discuss work/non-work-related issues or to be updated on the matter of tasks.

Visiting is mainly associated with professions such as consultants who visit customers' premises for a short duration of time.

Drawing on this discussion of travelling, visiting and wandering, these studies generally looked at the profession of individuals, or particular segments of population and how these individuals move between different sites. From this brief characterization, a rise of mobile workers has been related to the ubiquitous digital media and the changes of work that permits individuals to move from one place to another. Because of the rise of mobile workers, it has been researched extensively; the literature discussing mobile and nomadic workers is inconsistent as these terms are used interchangeably (Sørensen, 2010; Mazmanian, 2013; Ling and Donner, 2013).

However, it is important to note that nomadic workers are portrayed differently in contrast to mobile workers. For example, Chen and Nath (2008) state a *"mobile worker is always a nomadic worker, but a nomadic worker is not necessarily a mobile worker"* (ibid, p. 59). In this sense, nomadic workers *"are characterised by a higher level of mobility or greater distance from the traditional office, or both"* (ibid, p. 60). Some researchers labelled nomadic work as an extreme form of mobile work (Su and Mark, 2008). Interestingly, the main argument in this thesis is not only to analyse individuals who have to extensively travel to be considered nomadic, rather it is the organisation of work, and the way of working that can be considered nomadic. This argument is built on the research of nomadic work, which states that mobility is distinct from nomadism in the sense that nomadic working is more a 'way of life' (Czarniawska, 2013). Nomads seek freedom, opportunity to follow their own ideas, with the feeling of being alone. Studies in anthropology focused on particular segments of the population, in this case, tribes (Barfield, 1993; Salzman, 2004). These terms have been adapted in the other fields of literature such as organisational studies, CSCW and IS literature to describe the current working habits and technology-mediated lifestyles.

Nomadism comes from the Greek word *"nomas"* describing the movement of individuals who are part of a community and roam around for pasture (Salzman, 2004). The first distinction of nomads found in the literature relates to nomadism in a traditional sense, which means capturing different ways in which nomads relate to their environment (Barfield, 1993). Nomads require portable resources that can be easily transportable and hence can shift their habitat, but it dos not imply undirected wandering rather their movements depends on the availability of various resources. Further, the distinction is made between the three different

types of nomads which are *hunters and gatherers, pastoral nomads and tinker or trader nomads* (Wolff, 2014). Hunters and gatherers move daily and shift their habitat in order to find resources, and they use wild objects. They are organised into small, but isolated communities. Pastoral nomads or pastoralists have a focal site and occupy the same territory for a considerable period of the year. They use domestic objects to mediate their relation with their environment. Lastly, tinker or trader nomads belong to a larger society and maintain mobile way of living. Traditionally gypsies are a typical example of tinker or trader nomads and they travel from place to place in order to find new areas for living.

This traditional view of nomads can be used to understand the new types of users that are entering the workplace. For instance, Czarniawska (2010) proposes alternative way of conceptualising users, and makes a distinction based on *digital immigrants* and *digital natives.*

Digital immigrants are those who were not born into the digitised world and might not be familiar with digital media, as they had not grown up with it. For this reason, they might have different expectations of technologies, and they do not engage with various digital media outside of their workplaces. In particular, the new generation of users - *digital natives* or Millennials are comfortable with using digital media (Prensky, 2001;Vodanovich, Sundaram and Myers, 2010) and are technologically savvy. This type of workers represents the current working environment, and modern nomads typically move across a set of boundaries – temporal, spatial, organisational and cultural (Ciolfi and de Carvalho, 2014). Professionally, they are self-employed or freelancers, involved in knowledge work who travel episodically to see their clients or engage in forms of distant collaboration (Perry et al., 2001; Sørensen et al., 2008; Hansmann, 2003; D'Mello and Sahay, 2007). They are more comfortable with sharing their views and opinions online and digital natives are setting the scene in the workplaces (Vodanovich, Sundaram and Myers, 2010).

From the review above, it is evident that the spatial aspect is a long-standing question how to explain nomadic work, a smaller portion of research focuses on the role of place in terms of nomadic work (Brown and O'Hara, 2003), and some even consider different types of 'mobilities' attributed to physical space (Kakihara and Sørensen, 2002). Place is an important aspect in nomadic work even though the current literature suggest that any place is equally suitable for knowledge work. Hence, organisations need to rethink their current workplaces and design it to suit the new work styles (e.g. Brown and O'Hara, 2003; Hirst, 2011; Millward,

Haslam and Postmes, 2007). For this reason, the next section elaborates on the role of place and how it was viewed within the current literature.

2.3 The role of place within nomadic work

The academic discourse related to changing workplaces creates an interest among researchers in various disciplines that analyse how workplaces are evolving. Physical space guides and how and where interactions take place, giving individuals a sense of boundaries (Fabbri and Charue-Duboc, 2014 in de Vaujany and Mitev, 2014, Fayard, 2007). Hence the uniqueness of workspace design influences the practices that occur within the space. For example, an office is used for workers to perform routine tasks, while a factory is for manual work to produce or assemble parts.

A space is not only the physical structure that provides a support for individuals but it is *"invested with values and meanings"* where individuals can develop a sense of belonging and emotional attachment (Giddens, 2013). Thus, Alexander (1979) highlights the understanding of the "living" or the activities that are happening within spaces and he continues to say:

> *"those of us who are concerned with buildings tend to forget too easily that all the life and soul of a place, all of our experiences there, depend not simply on the physical environment, but on the pattern of events which we experience there"* (ibid, p. 62)

Within the office environment, researchers started to focus on offices in supporting work practice since the 1980s. There were different views in the literature stating whether offices are central for working or they will slowly disappear (Olson, 1983). Those who believed that offices were necessary for employees and will always be dominant for work, mentioned that the offices will change as the new practices of employees are continuing to emerge. Further, Clark (1996 cited in Mitchell, 1999, p. 72) supports the view of the dominance of offices for work and states:

> *"this does not mean that the majority of us will become full-time, stay-at-home telecommuters, and that traditional workplaces – particularly downtown offices – will simply disappear. Despite decades of interest in the possibility of telecommuting, there is little evidence that it will take over to such an extent. But we will certainly see increasingly flexible work schedules and spatial patterns, and many people will divide*

their time, in varying proportions, among traditional types of workplaces, ad hoc work settings that serve while they are on the road, and electronically equipped home workplace" (Clark, 1996, p. 72 in Mitchell, 1999)

Also, these transformations are related to the enhancements of digital media that continue to support movements of individuals and although Castells (2002) made these predictions more than a decade ago, it reflects the current organisational environment. He further states that individuals are not necessarily located in the office every day, but the work can happen in other places apart from offices, such as in cars, trains, planes and he continues:

"the emerging model of work is not the home teleworker, but the nomadic worker and the 'office-on-the-run'...... The overwhelming majority of people do have workplaces to which they go regularly. But many also work from home (not instead of, but in addition to, their usual workplace), they work from their cars, trains, and planes, from their airports and their hotels, on their vacations and in the night" (ibid, p. 234).

Based on these discussions, the concept of space is related to the work styles that emerge within the workspaces. Table 1 compares the traditional office style with new ways of working and demonstrates the differences mentioned above (Duffy and Powell, 1997). On the left side of the table it shows the pattern of work, which have changed from the routine process, individual work task to more creative and collaborative knowledge work. For this reason the offices are not often occupied during the whole duration of the day, instead individuals can move around and the work hours are irregular. To accommodate such work needs, the space has been redesigned to suit different purposes and work styles.

	Conventional office assumptions	New ways of working
Patterns of work	Routine process Individual tasks Isolated work	Creative knowledge work Work, teams, projects Interactive work
Patterns of occupancy of space over time	Central office locations in which staff are assumed to occupy individually 'owned' workstations on a full-time basis, typically over the course of the 9-5 day. The office assumes one desk per person; providing a hierarchy (planned or enclosed), and is occupied typically at levels at least 30 per cent below full capacity.	Distributed set of work locations (which may be nomadic, mobile, in the office or at home) linked by networks of communication in which autonomous individuals work in project teams. Daily timetable is extended and irregular. Multifunctional work settings are occupied on an as-needed basis. Daily occupancy of space near to capacity.
Type of space layout, furniture systems, and use of space and buildings	Hierarchy of space and furniture related to status. Individual allocation of space predominates over interactive meeting spaces.	Multiple shared group work and individuals task-based settings. Setting, layout and furniture of the office geared to work process and its tasks.

Table 1: Conventional office assumptions versus new ways of working. Duffy et al. (1997)

One of the transformations in the office environment was the creation of the open-plan office, which has been a trend for the past forty years. The idea behind this was to reduce desk assignment, mainly because of a drive to be cost-effective, but also because it afforded spatial flexibility and fluid networking (Duffy and Powell, 1997; Millward, Haslam and Postmes, 2007). The outcome of this research was to state that the 'one-size-fits-all' approach does not work in modern organisations and there needs to be a more integrated and innovative approach to workplace design that supports a variety of work styles. This has been also reinforced by Haynes, Greene and Myerson (2011) who say that:

"[no] longer is it enough to provide knowledge workers with open plan space, ergonomic furniture and the latest technology, the standard formula of the past decade" (ibid, p. 28)

Hence, Myerson and Ross (1999) presented different typologies of workplaces – team spaces, exchange spaces, community spaces and mobility spaces - that help organisations decide where its priorities are, and thus to create a diversity of workplace designs. Each of these typologies are described as:

- *Team Spaces – encourage team building, group working and promote cognitive work processes.*
- *Exchange Spaces – support sharing of knowledge through collaboration.*
- *Community Spaces – enhance a spirit of community and promote social cohesion.*
- *Mobility Spaces – support various work patterns.*

Currently, mobility spaces are favoured over others mainly because of their unprecedented choices; chairs and tables can be repositioned to create spaces that would suit both routine, individual work as well as group work (Myerson and Ross, 1999). Individuals can move around with the support of digital media. The main criticism of mobility spaces is the lack of 'ownership' and 'connectedness' to the workplace, colleagues and organisation. This means that the nomadic workers need to schedule their opportunities for informal interactions, as face-to-face encounters are missing. These social interactions are of great importance, as nomadic practice is predominantly associated with loneliness and isolation, which can potentially lead to loss of connection to colleagues and workplace (Mann and Holdsworth, 2003). Therefore, studies show that the close physical proximity between nomads is essential for developing relations (Kiesler, 2002; Brown and O' Hara, 2003). Few have examined practical issues associated with logistics of meeting other co-workers or offer design solution for those logistical needs that nomads need (e.g Mark, 2008, Mark and Su, 2010). As an instance, the research of Fayard and Weeks (2007) explains how the physical characteristics of a space influence informal interaction. They found that interaction was supported if proximity, privacy and permission were balanced in a physical place. Therefore, a key challenge for modern organisations is to create physical arrangements that correspond to the nomadic work style, optimising the use of space and strengthening creativity and learning between nomads (Olson, 1983; D'Mello and Sahay, 2007; Halford, 2006; Liegl, 2014).

With these new practices emerging, organisations changed the appearance of the offices by creating spaces that resemble cafes, streets or town squares (Myerson and Ross, 1999; Harvey, 2006; Haynes, Greene and Myerson, 2011). These spaces are suited for different work styles because it is unsuitable to:

"lump knowledge workers into one homogenous group and assume they all work in the same way when there are very different types of knowledge worker with very different types of needs" (Greene and Myerson, 2011, p. 20)

However, various researchers accentuate spaces that are not dedicated to the core organisational activity. These are called in-between workspaces that are corridors, coffee machine rooms or photocopier areas (Fayard and Weeks, 2007). Further, these spaces provide opportunities for unplanned, spontaneous interactions and create awareness among individuals that are critical to exchange knowledge and increase innovation (Fayard and Weeks, 2007; Harrison and Dourish, 1996b; Brown and O'Hara, 2003). The in-between spaces allow individuals to exchange handshaking and other social, non-verbal rituals that are impossible to accomplish through technology-mediated means (Liegl et.al. 2014).

This shifting of nomads across workplaces and other spaces is not often seamless, as it requires coordinating individuals, technologies and work practices as they are simultaneously 'now here' and 'nowhere' (Friedland and Boden, 1994). This goes beyond the traditional sense of stability through the sense of place (Harvey, 1989), where social norms that were often bound to the notion of place and where community and interpersonal connections were established (Kellner, 1992). Especially since digital media tend to undermine this stable conception of space offering possibilities for flexible way of working. Hence, this has led to reconceptualization of places and authors started to discuss the emergence of 'hybrid spaces' (de Souza e Silva, 2006). The underlying idea behind the 'hybrid spaces' is that digital – 'virtual' and physical spaces – 'real' influence each other and are becoming 'blurred' (Jordan, 2009). For instance, the work tasks previously accomplished in offices can be done routinely from any place, and digital media have changed the concept of space and distance. Further, nomads experience a 'place polygamy' or 'multi-locational work' (Dicken, 2013), as a strong sense of place does not exist in this practice.

Because of these 'blurrings' between digital and physical spaces (Jordan, 2009), and the implication of digital media on nomadic work, the next section will examine the technology aspect of nomadic work. Digital media will continue to reshape the perception of working, create new forms of interacting and help to form communities that exist outside and beyond physical spaces.

2.4 Nomadic working enabled by digital media

2.4.1 The ubiquity of digital media

In this thesis, digital media are all the devices, channels, applications, online and web services and social media through which communication is achieved (Rice and Leonardi, 2013; Majchrzak et al., 2014).

The wider literature on technology adoption in relation to nomadic working tends to be segmented focusing on the various aspects associated with technologies. For instance, the early studies within nomadic work literature tend to portray technologies as a *"support system"* or enabler of flexibility to those working remotely (Lee and Liebenau, 2002, Kakihara, 2003), and this support must be *"transparent, integrated, convenient and adaptive"* (Kleinrock, 2001, p.42). Further, it captures the use of audio-visual features such as production of gestures and the coordination of talk or visual conduct and these have been critical in providing better support for collaborative work between remote individuals (Lyytinen and Yang, 2005; Yoo, 2010; Sorensen, 2010; Kakihara, 2003). Others have focused on the 'informal' aspects related to communication and focus on technologies that are directed towards mundane accomplishments (Lyytinen and King, 2002). The researchers who have been addressing the improvements of digital media and technology affordances can be translated in specific performances (Weiser, 1993; Kleinrock, 1996). The outcome of this early research in IS and CSCW studies discussed the supporting role of mobile technologies, IM or email (Ciolfi and de Carvalho, 2014; Luff and Heath, 1998; Cabitza and Simone, 2011). These devices often operate simultaneously are being pervasive and permeate everyday life of nomads.

While these studies provide a good grounding on the use of digital media, the issues in the modern organisations are more problematic than the initial technology-focused aspect of how technology enables nomadic working and alters behaviours. Additionally, Prensky (2001) comments on the changes happening with digital media:

> *"It is now clear that as a result of this ubiquitous environment and the sheer volume of interaction with it, today's [individuals] think and process information fundamentally differently from their predecessors"* (ibid, p. 1).

Therefore, more research is needed to capture the new emerging issues and focus on new digital media such as social media and its adoption within the organisational setting (Wilson et al., 2011). Further, these technologies have novel features such as blogging, podcasting, collaborative content creating, social networking, multimedia sharing and social tagging. It is used interchangeably with Web 2.0, user-generated content or the social web (Kaplan and Haenlein, 2010) and the use within organisations is often defined as enterprise social media (ESM) (Cook, 2008; McAfee, 2006). Table 2 describes different types of enterprise social media – blog, social networking, wiki, content collaboration and their main characteristics. It is not only the novel features that have changed with social media but it is also the ability of these devices to process all forms of data through text, video, audio and integrate multiple application in the same device (Kaplan, 2010). Hence the routine everyday practices such as seeking advice, coordinating tasks and building communities happens digitally (Kaplan and Haenlein, 2010).

Social media type	The main characteristics
Blog	Sharing content with others Viewing and submitting comments in one place Seeing recent updates, including who has viewed or edited a post
Social networking	Forming virtual communities by inviting colleagues to join a network Finding experts, communities and content within the organisational network Sharing profile and expertise, activities, interests, communities, posts and followers with others Suggesting for people to follow, communities to join and posts to read
Wiki	Creating content and sharing it with individuals or across communities Enabling simultaneous working Tracking contributions Viewing and submitting comments in one place Maintaining project history in one location
Content collaboration	Inviting collaborators and sharing content and files Collaborating with others in one place

Table 2: Enterprise social media. Adapted from: (Kaplan and Haenlein, 2010; Kietzmann et al., 2011; Treem and Leonardi, 2012)

2.4.2 Understanding media choice

Previous theories aimed to explain individuals' choice by understanding how and which digital media are used for a particular practice. It was usually understood through analysing behaviours and attitudes towards media choice - Media Richness Theory (e.g Daft and Lengel, 1986; Daft and Lewin, 1993; Daft and Wick, 1984, Dennis and Kinney, 1998), or by focusing on matching the medium to the task (Task-fit Theory) (e.g Campbell, 2006; Dennis, Fuller and Valacich, 2008; Carlson and George, 2004). Media Richness Theory (MRT, also referred to as Information Richness Theory (Lee, 2003)) considers perceived richness of electronic media as an inherent property of media (Daft and Lengel, 1986). Its central claim is that communication media differ in their capacity to process rich information (Daft and Lengel, 1986), which depends on its capacity to provide immediate feedback, the number of cues and channels used, personalisation, as well as language variety (Daft and Lengel, 1986, p.560). According to this theory he richest medium is face-to-face, which provides immediate feedback, multiple cues, and the opportunity to use body language. In addition, shifting to digital media reduces richness as people experience different levels of cue transmission and interactivity. This theory considers different degrees of traits" in other words "richness" as a property of electronic media that influences the effectiveness of information dissemination (Daft and Lewin 1993; Rice 1992), and proposes a continuum that ranges from rich media (telephone, personal documents for communications) to lean ones (impersonal documentation, forms). According to MRT, people select media by matching the objective properties of various media with their information processing needs and relating to characteristics of the tasks that individuals attempt to accomplish via digital media. For example, Dennis (2001) proposed that the effectiveness of communication is dependent on the match between the requirements of individuals for a given task, and the capacity of the specific medium used. Therefore, the choice of media, according to MRT, is based on rational decision-making at the individual level (Markus, 1994), a process known as Experience Account (King and Xia, 1997). However, researchers challenging the MRT have shown that perceived richness depends on the social context in which the media are used (Carlson and Zmud, 1999; Fulk et al, 1992; Lee, 1994; Markus, 1994; Ngwenyama et al. 1997). They criticised MRT for theorising at the individual level, while communications media are used to connect people, i.e., requiring theories that incorporate the social context. For instance, Marcus (1994) argues that media use is gradually institutionalised in an organisation, and reinforced through collective norms and

social control (Markus, 1994), rather than being an individual choice. Furthermore, King and Xia (1997) highlighted that prior understanding of tasks (i.e., if individuals used media in the past to complete a similar task) provide individuals with a better understanding of the project and help them to evaluate how well the technology fitted (or not) the task (King and Xia, 1997). This then influences their perception of fit for recurring situations based on same task, which overtime contribute to the development of norms and institutionalised behaviours. Ultimately the technology becomes embedded in working practices through the on-going interplay with its organisational context of use (Baptista, 2009).

Importantly, digital nomads are not simply choosing between various digital media rather they are combined to suit variety of tasks (Belanger and Watson-Manheim 2006). Previous research has uncovered the simultaneous use of digital media, which is often referred to as multi-tasking or overlapping two simultaneous conversations (Turner and Reinsch, 2007). This type of paring of multiple media is often linked to a particular organisation where immediate responses are required (Watson- Manheim and Bélanger, 2007). The other type of grouping is sequential use of digital media, meaning that a specific tool is chosen at one time and then followed by another tool (Cameron and Webster, 2011; Reinsch et al., 2008; Zouhair and Cameron, 2014). Nevertheless, these groupings of technologies changed with new digital media such as enterprise social media, as individuals have to possibility to access and engage with someone out of their stable work place and *"carry on multiple conversations"* simultaneously (Zouhair and Cameron, 2014 p. 1).

Using multiple digital media at the same time impacts on efficiency and can increase or decrease productivity (Aral et al., 2012; Otto et al., 2012). Researchers point to the problems associated with *"inefficiency, irritation, and mistakes"* (Reinsch et al., 2008 p. 391) and highlighted the disruption that multi-communicating can cause. Also, another issue is associated with the reduction of face-to-face contact (Nardi and Whittaker, 2002; Fiol and O'Connor, 2005) and some state that individuals might be isolated and lonely. Even though the presence of individuals in a physical location is missing, nomads might not be as isolated as is portrayed, which is also confirmed by Wellman et al. (2001), who said:

> *"digital media such as instant messenger and social networks have helped to enable face-to-face contact rather than damage or replace it"* (ibid, p. 243).

Therefore, it is important to re-evaluate the current theories and to *"examine prior empirical findings in a new light and to outline a new research agenda for multitasking"* (Benbunan-Fich et al., 2011 p.7). For this reason, researchers call for *"further research on multitasking, particularly within the context of information behavior"* (Spink et al., 2008 p.93). It is argued that individuals have the choice to *"turn technology off"* (Stone, 2008, p. 3), but the current understanding of using multiple media at the same time recognizes the facilitating role of the Internet.

Researchers state comment on the role of the Internet:

> *"the Internet has become a source of endless distraction that derails deep thought by stimulating in its users a profoundly heightened attention to the multitudinous fragments of information it contains"* (Rose, 2010 p.7).

Further, it allows individuals to be *"connected when needed"* (Green, 2002, p. 227) and the communication is increasing and as Carr (2011) states;

> *"depending on how many information streams we subscribe to and the frequency with which they send out updates, we may field a dozen alerts an hour, and for the most connected among us, the number can be much higher"* (ibid, p. 132).

Since connectivity influences the simultaneous digital media use as nomads need to be constantly available and accessibly and work together is more complex way, I will further elaborate on how the literature captures connectivity. Since this topic is still emerging, the literature review involves looking beyond IS research and draws on studies published in organisational studies and the fields of psychology and communications. The importance of connectivity is tied with the fact that there is an ongoing concern that using multiple digital media can lead to interrupted and fragmented working practices for individuals (Mazmanian, 2012).

2.4.3 Increasing connectivity of digital media

Being constantly available and accessible is important to legitimacy of nomadic work practice (Leonardi, 2013). However, it is easy for individuals to lose their sense of control over their workload, and *"anytime and anywhere connectivity"* has been transferred to *"all the time,*

everywhere" connectivity (Jarvenpaa, Lang and Tuunainen, 2005). In the context of technology-mediated communication, human computer interaction and computer supported co-operative work, scholars have considered connectivity in relation to interruptions (e.g. Pica, Sørensen and Allen, 2004; Cousins and Robey, 2003; Kakihara, Sørensen and Wiberg, 2002; Bell and Dourish, 2006; Sørensen, 2010). Interestingly, these studies do not systematically examine the relationship between interruptions and digital media, rather they consider interruptions as *"a synchronous interaction which was not initiated by the subject, was unscheduled and resulted in the recipient discontinuing their current activity"* (O'Conaill and Frohlich, 1995, p. 262).

In my view, there are few issues with this general approach in understanding interruptions, as this perspective does not fully recognize the connectivity afforded by digital media that is already changing the nature of work itself. Also, individuals are often ignored in terms of these interruptions and this view does not take into account how employees interact with technology and goes beyond simply responding to alerts notifying of incoming or stored communications (Wajcman, 2010). The recent research of Mazmanian (2013) is one of the few studies that acknowledges the use of mobile technologies, BlackBerry, and its embeddedness in the everyday lives of knowledge workers.

In contrast to this negative view of being connected, there are positive aspects linked with connectivity that are not only associated with flexibility and autonomy of nomadic workers. Also, being connected is related to well-being, developing and building relationships (Walton et al., 2012), and it is a prerequisite for social capital or 'who knows who' within the organisational setting (Larsson, 2007). Staying socially connected is especially important within the nomadic environment since nomads are not located within the same space (Köbler et al., 2010; Wei, 2006). For this reason, some have questioned whether social connectivity can be achieved in digital spaces. A previous study discovered that it is possible to develop social connectedness online, and authors have examined posting statuses on Facebook and found that that status updates enhanced the feeling of being socially connected between individuals (Köbler et al., 2010). This was evident because individuals actively shared information about themselves. Additionally, besides sharing information, researchers discovered that visibility through status updates can make others to feel socially connected as in the instance of instant messenger (Mazmanian, 2013). As a result, the sense of social connectedness can be achieved by feeling in touch even when no direct communication exchange exists between individuals

(Kuwabara et al., 2002). Hence, in this context social connectivity is viewed as being positive and almost needed aspect to replace the face-to-face contact within the digital spaces.

From these instances, it is evident that individuals have to constantly negotiate desirable versus disruptive interactions, which is difficult to manage because connectivity is seen as a paradox or *"the simultaneous presence of contradictory, even mutually exclusive elements"* (Quinn, 1988, p. 2). Questions that have not been answered are associated with what Kolb, Collins and Lind (2008) call *"the requisite state of connectivity."* These authors propose that it is the ideal state of connectivity, but there is a lack of knowledge how it can be achieved and how much connectivity is required within the workplace. This requisite connectivity is associated with

> *"reliable communication and/or transportation media/modes, with operable alternative workaround options ..."* (Kolb, 2008, p. 182).

Even though nomads have the opportunity and free power to decide when and how to stay connected or who they want to be connected to (Mazmanian, Orlikowski and Yates, 2013; Hislop and Axtell, 2011; Middleton, 2007); but connectivity is also shaped by various factors such as technologies, organisational or interpersonal challenges (Kolb, 2008), which facilitate or restrict connectivity. Since connectivity is merely influenced by individuals, it was recently characterised by Kolb (2008) as *the potential* to reach individuals or to be accessible, and he further continues to say:

> *"...the mechanisms, processes, systems and relationships that link individuals and collectives (e.g. groups, organisations, cultures, societies) by facilitating material, informational and/or social exchange. It includes geo-physical (e.g. space, time and location), technological (e.g. information technologies and their applications) as well as social interactions and artefacts, including shared histories, travel, trade, migration, culture, politics and other social activities."* (ibid, p. 128)

Although these studies provide a good grounding and understanding of connectivity, the research on being connected is still in a nascent stage and does not fully take into account the changing nature of work (Kolb, 2012; Wajcman, 2011). Previously researchers used to question which media were best suited for certain tasks (Germonprez and Zigurs, 2009; Shirani, Tafti and Affisco, 1999; Rice, 1992; Dennis, Fuller and Valacich, 2008), now it is required to understand how much connectivity is enough; for example, asking how much

connectivity do nomads need, or how does connectivity affect their productivity (e.g., effectiveness and efficiency), or performance (such as innovation and collaboration) or motivation (engagement or burn out) (Kolb, Caza and Collins, 2012). Researchers call for more studies on this emerging topic and Monge and Contractor (2003) states that connectivity is: *"[an] important aspect of communication that impact[s] adoption"* (Monge and Contractor, 2003, p. 34).

Following this line of thought, the next section focuses on analysing affordance literature, specifically because the literature on connectivity still lack in explaining affordances of digital media and how individuals use these digital media to manage connectivity. Leonardi and Barley (2008) highlight that individuals rely on digital media, which often results in unexpected ways of using technologies. To relate it to the literature on connectivity, the affordances of digital media will be explored to understand how individuals use digital media to manage or balance connectivity, and whether nomads can control connectivity, or it is inherent in the digital media itself. Questions that will be answered are associated with the understanding of digital media affordances that *"set limits on what it is possible to do with, around, or via the artefact"* (Hutchby, 2001, p. 453).

2.5 Affordances of digital media

The affordance theory is useful for this research as technology offer different opportunities and constrains for goal-oriented action. The literature on affordances allows the researcher to remain open about the uses and consequence of digital media, depending on an individual's intention and the context within which it is used (Zammuto et al., 2007).

2.5.1 Gibson's and Norman's affordance theory

One of the earliest references to affordances in research literature originated in the work of (Gibson, 1986), a perceptual psychologist, who first applied the affordance concept to everyday settings. For example, a chair affords sitting, standing or throwing. Gibson's (1986) explanation of affordances is relatively simple; animals perceive an object in terms of what uses it has, and he further continues:

> *"the affordances of the environment are what it offers the animal, what provides or furnishes, either for good or ill. The verb to afford is found in the dictionary, but the*

noun of affordance is not, I have made it up. I mean by it something that refers to the environment and the animal in a way that no existing term does. It implies the complementarity of the animal and the environment" (ibid, p. 127)

Gestalt theorists, who were the first group of psychologists − Koffka, Mach, Kohler − influenced Gibson in his understanding of affordances, which he defines as physical properties embedded in an object. For example, a computer offers many affordances, buttons of various sizes that can be clicked on, dragged, and scrolled with a mouse or by brushing fingers across the screen. These objects do not offer what he calls 'real' physical affordances; it depends on individuals and their behaviour how they navigate in an environment (Gibson, 1986). In Gibson's view, affordances are then seen as *"possibilities for action,"* and it is a one-to-one relationship between the individual and the object with which he/she interacts. A pen affords the opportunity for the action of writing in the hand of an adult; however, it would not offer the same opportunity in the hand of a toddler who is unable to perform this action.

The main aspect of Gibson' (1986) work is that affordances are perceived directly by an individual. The perception is associated with past experience, memory or context, and individuals are able to perceive affordance directly because they are already familiar with the environment. However, Gibson's ecological approach to affordances has been criticised for being naive because *"affordances are not objective functional properties of objects, but they are always relative to a given agent"* (Rome, Hertzberg and Dorffner, 2008, p.111).

Norman (1988) later adapted Gibson's original concept of affordances and introduced it in the human-computer interaction field (HCI). His interest in using the concept was to better support the design of technology by analysing the physical aspect of an object and the mental aspect of the user. Norman (1988) further continues to explain his view of affordances:

> *"... it refers to the perceived and actual properties of the thing, primarily those fundamental properties that determine just how the thing could possibly be used. [...] Affordances provide strong clues to the operations of things. Plates are for pushing. Knobs are for turning. Slots are for inserting things into. Balls are for throwing or bouncing. When affordances are taken advantage of, the user knows what to do just by looking: no picture, label, or instruction needed"* (ibid, p. 9)

To further elaborate on this quote, there are two types of affordances − *real and perceived.*

While *real* affordances are the physical characteristics of technology; *perceived* properties are characterised in terms of the appearance of the technology that gives clues of its operation to individuals who use it (Norman, 1999). Individuals act on their past knowledge, experience, goals, expectations, skills and cultures, which influence how they perceive an object and "*determine how the thing can be used*" (Norman, 1988, p. 9).

There are subtle differences between Norman's and Gibson's views, which is further mentioned in Table 3. While Gibson focuses on the action itself, Norman considers both the action and the individual. One of the focal points of Norman's view of affordances is that affordances do not change across contexts, but they are waiting to be perceived.

Gibson's affordances	Norman's affordances
Independent of the actor's ability to recognise action possibilities Example: The chair can be used for sitting whether or not the individual realises it.	Can be dependent on the experience, knowledge or culture of the individual Example: An adult who has more knowledge can recognise more quickly the potential of the chair for sitting than a child.
Does not change with the actor's needs and goals Example: The chair can be used for sitting whether or not the individual wants to sit.	Perceived properties might not exist Example: The chair might be too weak to handle the weight of an individual.
Relative to the actor's physical capabilities Example: The chair can be used for sitting only if it is a certain height compared to the individual.	Objects suggest their uses Example: The flat surface of the chair suggests it is meant for sitting.
A dichotomous construct (e.g., affordance exists or does not exist) Example: Both chairs and tables can be used for sitting.	A continuous construct Example: A chair is better for sitting than a table.

Table 3: Affordances Gibson versus Norman. Adapted from: McGrenere and Ho (2000)

The main contribution of this work is to analyse affordances theoretically, aiming to define affordances and highlighting their characteristics. Its popularity among IS researchers is tied to the fact that it helps to overcome the limitations of theories that focus on psychological and social behaviour and thus ignores the functionalities of digital media. Also, it surpasses theories that make deterministic assumptions about the impact of technologies on individuals' behaviours (Hutchby, 2001).

Hence, the affordance theory brings the use of digital media forward, it is no longer 'an outsider' or an external aspect that possibly leads to innovation, but it is included as an organisational factor. The application of affordance theory in IS will be analysed in the next section.

2.5.2 Affordance theory in IS

The affordance theory described in the previous section has been refined and applied by researchers in the information systems area (Majchrzak et al., 2014; Treem and Leonardi, 2012), to study the uses and consequences of digital media in organisations (Markus and Silver, 2008), and the related organisational change (Zammuto et al., 2007; Volkoff, Strong and Elmes, 2007).

The relevance of the affordance theory in IS research has attracted researchers who focus on analysing digital media beyond the user-centric perspective and *"bundle of features"* (Faraj, Jarvenpaa and Majchrzak, 2011, p. 1233). Instead, the affordances are captured from the so-called relational perspective where neither the technology nor the user is dominant. It is a reciprocal relationship that exists between the user and the technology and is relative to capabilities of an individual (Zammuto et al., 2007). These capabilities then impact on the possible action of using the technology (Volkoff, Strong and Elmes, 2007; Hutchby, 2001).

Additionally, the use of affordance theory is expanding in analysing social media use as an integrated platform (e.g Majchrzak et al. 2013; Faraj and Azad, 2014; Wagner et al. 2014; Treem and Leonardi, 2012; Faraj et al. 2011). Enterprise social media is becoming pervasive in organisations, and much of the recent discourse is oriented towards the implication of communication inside and outside the workspace influencing knowledge sharing, relationship building and social capital (Majchrzak et al., 2014; Argyris and Monu, 2015).

Enterprise social media are relatively unique compared to other communication tools, because it has been popular in individuals' personal lives before being deployed as an enterprise application (Yoo, 2010). Hence, individuals as users of these tools do not perceive what it is, rather what use it has (Treem and Leonardi, 2012). Further, it is important to note that each individual perceives the material properties of digital media differently. Enterprise social media are used in a way that designers had not originally anticipated; it can be malleable and

provides more innovative ways of working.

As a consequence, studies analysed social media in terms of possibilities for goal-oriented actions. Although the term of technological affordance in literature is congested, it is still attractive for researchers to capture the new interactions in the workplace that social media allow. Most of the studies build on the research by Treem and Leonardi (2012) who described four affordances of social media, such as i) persistence (content can be recorded and archived); ii) replicability (content can be replicated); iii) scalability (content can be visible); and iv) searchability (search can be performed).

Others have shown more innovative ways of understanding affordances of digital media instead of purely expressing its enabling features. For example, Majchrzak (2013) shows with her research that contradictory influences of social media affordances exist. This means that each affordance involves tensions of simultaneously enabling and hindering an action (Majchrzak and Markus, 2012; Leonardi, 2011). Hence, she calls for further research that diverts its attention from capturing the affordances in terms of opportunities for actions and how individuals and organisations reach their goal; instead the studies are enriched by understanding affordances that are hindering action. This helps to reveal positive and negative outcomes that can impact on the use of digital media in organisations.

These studies set a good grounding on conceptualising affordances of new digital media. However, current research on social media affordance overlaps to a certain extent. Additionally, studies tend to identify generic affordances of social media, which narrows the focus on technology affordance and creates a risk of losing the relational nature of affordances (Leonardi, 2015). Also, most studies were primarily theoretically motivated studies on social media technologies, and more empirical studies are needed to capture the use of digital media in the workplaces, which is vital for the fields of information systems (Leonardi et al. 2013).

To move beyond, since enterprise social media and other digital media tools consist of several affordances in one tool, a deeper investigation is worthwhile to capture it as a nexus or bundle of affordances. For example, a smartphone can be used for various activities − photography, voicemail, Internet browsing − and there are many other affordances embedded in this single device that were previously only available in separate technologies. The underlying idea behind this is discussed in the studies on nested affordances. The researchers studying nested affordances enrich the current perspectives in the literature and expand on the earlier

approaches that focus on the integration of features accessible on one digital platform. This will be discussed in the next section.

2.5.3 Nesting of affordances

The previous sections focused on the basic affordances that provide opportunities for action. This section reviews studies that have examined the connection of affordances on different levels and more specifically focuses on nested affordance. However, the studies on nested affordances have been scarce and even Gibson (1986) does not address this issue fully, but mentions it indirectly.

Affordance nesting is seen as an organising principle and affordances are *"grouped together"* in a taxonomic fashion. The perception of nested affordance depends on individual representations and knowledge, and the perceived use opportunities (Gaver, 1991). For this reason, an individual might not perceive all the details of an affordance in order to identify it (Ruecker, Radzikowska and Sinclair, 2011).

For instance, the research of Ruecker and Radzikowska (2012) identifies 'invisible nesting', which is composed of a combination of *invisible* and *visible* affordances, where the invisible affordances become visible upon investigation. It involves experimenting and finding out whether the 'perceived affordances' are the 'real affordances'. For example, a doorknob can be either locked or unlocked, but it can be turned or pushed, which will become evident after an individual experiments with it.

Conceptualising affordances through its nesting provides a unique angle to understand how individuals assemble different technologies together, and why they use certain digital media over others in supporting work practice. In modern organisations it is evident that there is a large *'communication portfolio'* and the digital environment is more complex, full of information system diversity (Jung and Lyytinen, 2013). Digital media implemented in an organisational setting influence the use of existing tools, and they are often used simultaneously to interact with others (Watson-Manheim and Bélanger, 2007; Leonardi, 2011). In the case of instant messenger implementation, authors found that its use resulted in a decrease in face-to-face contact and the use of other digital media such as email or mobile phone (Muller et al., 2003; Cameron and Webster, 2005).

Researchers have recently raised the need for further studies to explore the affordance of digital media that are used simultaneously and to capture the complexities of these tools in a work practice. Further, this is evident in the research of Lyytinen (2010), who says that multiple digital media used for communicating, interacting and working is worth considering. Lyytinen (2010) argues:

"[the] combinatorial explosion of use situations and their complexity, there are decreasing returns from a static single tool/single user approach" (ibid, p. 23)

The idea of nested affordance leads to a better understanding of affordances, especially facilitating the exploration of the simultaneous activation of multiple affordances, their connections to each other and the reason why the desired use opportunity allows for an undesirable one. For example, each activity is represented by a number of activities, and these activities refer to several functionalities embodied in digital media.

This section started with a discussion of affordance Gibson (1986) and its application in the field of human-machine interaction (Norman, 2007). It was later stated that the affordance theory has proven to be useful in the IS field and has recently been extensively analysed in relation to social media. Further, IS researchers have focused on outlining affordances of social media, and they called for further research on this topic, especially in capturing enterprise social media use within the organisational settings. We have discussed the concept of nested affordance to understand the practice when multiple digital media are used simultaneously. This is vital for the digital nomadic setting, when digital nomads are often presented with multiple digital media to communicate and interact as they move across various spaces. The key themes in research literature are what motivated the researcher to look closely into this concept.

2.6 Literature review synthesis

The aim of this review was to critically analyse the current literature on nomadic work, technology adoption, connectivity and affordances that will help to set a grounding to comprehend digital nomadic practice. Table 4 outlines the different literature streams and synthesises the key themes, research shortcomings and main authors.

Literature streams	Key themes	Research shortcomings	Main authors
Nomadic and mobile literature	*Theorisation of mobility* The early literature considers mobility as *geographical movements* of individuals. Generally *tied with professions* that require movements between places (taxi drivers, police officers, health professionals, sales personnel, security guards), or more recently associated with freelancers and creative workers.	There is a lack of literature exploring nomads within *an organisational setting.* The nomadic literature is dispersed across multiple disciplines that focus on each aspect independently.	(Kakihara and Sørensen, 2002; Sorensen et al. 2008; Su and Mark, 2008; Lyytinen and Yoo, 2002; Kristoffersen and Ljungberg, 2000; Makimoto and Manners, 1997)
	The role of place within nomadic literature The literature explored work happening *'anytime, anywhere'* and stated that all places are suitable for working.	The literature *neglects to theorise the role of place* as it assumed that the interactions of nomads are *'space-less'.*	(Brown and O'Hara, 2003; Liegl, 2013; Wellmann, 2001; Jordan, 2009)
	Technological aspect of mobility The literature explored the technology aspect of *enabling* nomadic working, but mainly focused on *mobile technologies (e.g mobile phones, or pads).*	The studies lack in exploring *simultaneous use of digital media.* More research is needed on social media *within an organisational setting.*	(Leonardi, 2013; Jung and Lyytinen, 2013; Watson-Manheim and Belanger, 2007)

Connectivity literature	*Technical connectivity* The literature explored the ubiquity of technologies and with it associated *'anytime and anywhere'* connectivity.	It is vital to explore *the appropriate levels of connectivity* within an organisational setting. More studies are needed that recognise the role of individuals *in controlling their connectivity.*	(Richardson and Fich, 2011; Kolb, 2008, 2012; Mazmanian, 2013; Fonner, 2010; Leonardi, 2012, Wajcman, 2010)
	Social connections With the increasing connectivity of digital media, individuals meet less in physical spaces, which can lead to *loneliness and isolation.*	Studies should assess whether *social connectivity can be built online* especially through the enterprise social media.	(Hylmö and Buzzanell 2002; Larsson, 2007; Köbler, 2010; Bradner and Mark, 2001; Biocca, and Harms, 2002)
	Interruptions The literature focused on interruptions and in particular, explained when individuals are interrupted and how they deal with interruptions.	The literature on interruptions lacked in explaining how technologies contribute to interruptions and *individuals were often viewed as being passive to interruptions.*	(MacFarlane, 1999; Harris, 2005; Suchman, 2007; Wajcman and Rose, 2011; Fonner and Roloff, 2010)
Technology adoption	*Media-based theories* Media choice studies used a criterion of 'good' media and assessed if a user can achieve effective communication tasks. They created a scale to measure the capacity of technology to convey information richness.	Media choice theories are out-dated and were suited for capturing the traditional media. Novel theories are needed to understand new digital media and in particular the plurality of technology choice.	(Daft and Lengel, 1986; Dennis et al., 2008; Trevino et al., 1987; 2000; Jung, 2012; Bélanger and Watson-Manheim 2006)

Affordance theory	*Technology affordance existence* Affordances are seen as *an enabler or a positive potential* to allow individuals to perform an action. To date, scholars seem to identify more technology-specific affordances of social media.	Capturing affordances within IS literature is relatively novel, which means that there is a *lack of empirical studies* that capture affordances within an organisational setting.	(Majchrzak and Markus, 2012; Robey et al, 2013; Leonardi, 2013; Yoo et al. 2012) (Conole and Dyke 2004; Van Osch and Mendelson 2011; Vitari and Pigni 2013)
	Nested affordances The affordance nesting has been applied to the research outside of the IS field that analyses the affordance nesting of everyday objects.	The concept of nested affordances is under-researched. It is vital to understand how affordances are grouped together in order to explain multiple technological capabilities that provide the potential for a particular action.	(Gibson, 1991)

Table 4: The synthesis of literature

Much of the work reviewed above focused on a simple understanding of individual movements in time and space (Kakihara, 2003), which was considered as the core aspect of nomadic work. The movements of individuals were predominantly outside of the organisational setting (Sorensen et al. 2008). In spite of the fact that the research on nomadic work has been extensively analysed for several decades, some researchers have started to re-examine the foundation upon which nomadic work was built, and that is the movement of individuals (Lyytinen and Yoo, 2002). This is vital as the majority of studies within nomadic field of literature were carried out within a pre-specified setting such as school environment or often outside of the organisational boundaries. There is a gap in understanding how nomadic workers behave within an organisational setting as culture, norms and policies influence individuals' work practice (Ciborra, 1996). This study aims to bridge this gap by understanding the movements of individuals that are part of a team within an organisational setting who need to

organise both, collaborative actions with their colleagues and their solitary tasks.

Digital media are central for nomadic work, and research studies consistently analysed a single digital media use or the possibility of choosing between different tools that would be relevant for a particular task (Daft and Lengel, 1986). Rather, in the current work environment, individuals rely on combination of digital media, which allow them to complete communication goals and achieve their work tasks (Bélanger and Watson-Manheim 2006, Stephens et al. 2008, Watson-Manheim and Bélanger 2007, Woerner et al. 2004). Addressing these areas would help to bridge the gap in the literature that focuses on the IT adoption, and in particular those who have analysed the choice of digital media in conjunction (Leonardi, 2012; Watson- Manheim, and Bélanger, 2007).

Authors have examined the enabling and constraining aspects associated with IT use and paid attention to technology affordances. When technologies afford particular action and often lead to contradictory outcome, coping strategies are likely to emerge and determine how digital media are used. For this reason, I am relying on affordance theory as it has been recently applied in the IS research and attracted researchers who were interested in analysing new digital media beyond their user-centric perspective (Faraj, Jarvenpaa and Majchrzak, 2011). Hence, there were calls from researchers interested in affordance theory to explore new, unique affordances embedded within new digital media such as enterprise social media platform (Majchrzak et al., 2014; Treem and Leonardi, 2012; Faraj, Jarvenpaa and Majchrzak, 2011).

While digital media have always been central in understanding nomadic work, with the increased digitisation, the affordances of digital media have changed. However, it is not so much the capabilities of digital media that are changing the way work is accomplished, but rather the connectivity embedded in digital media. Additionally, this indicates that a clear image of digital nomads cannot be obtained without analysing digital media and their ever-increasing connectivity (e.g Kolb, Collins and Lind, 2008; Dery and MacCormick, 2012; MacCormick, Dery and Kolb, 2012). Academic discussions on connectivity are starting to emerge, but they are still in their infancy and need a more solid foundation to contribute to the current research (Kolb, 2008; Kolb, Caza and Collins, 2012). For this reason, this thesis bridges another gap associated with understanding the consequences of anytime and anywhere connectivity, and how individuals cope with being constantly connected.

Apart from understanding the choice of digital media and its use, I aim to focus on the physical

space associated with nomadic work, which enables connections in a way that digital media cannot convey (Brown and O'Hara, 2003). Whether realised or not, many nomads rely on physical workplaces to engage in social interactions and to be involved in a more tangible community (Caruthers and Heath, 2001). All these are indications of a major change occurring in the workplace setting that has been redesigned to suit the new ways of working and to complement activities that cannot take place in digital spaces. Hence, there is a need to comprehend physical space as a conceptualisation of digital nomadic practice.

The next section explains the conceptual framework that was created to organise the research topic of this thesis the digital nomadic practice based on the integrative approach proposed by Lyytinen and Yoo's (2002) in understanding the nomadic environment. Further, they highlighted the need for connecting technological, social and organisational aspects, which enable physical and social mobility, which is further explained.

2.7 Conceptual framework for digital nomadic practice

Studying the digital nomadic practice allows me to focus on the consequences of digital media, and to better understand how individuals work in digital and physical spaces. This is important as the connectivity of digital media is continuing to increase and influence the everyday practices within the organisational setting.

I created a conceptual framework in Figure 2 that represents the integration of the three dimensions to address the shortcomings of prior research. The framework of digital nomadic practice shown as a continuum that stretches from *the conventional work practice*, on the left, to *the digital nomadic practice*, on the right. The idea behind the continuum is that the conventional work practice is not distinctively different from the digital nomadic practice, but the extremes are quite diverse. Further, these axes present dimensions of the digital nomadic practice, which are the core pillars, namely: i) the use of digital media in conjunction; ii) the intersection between digital and physical spaces; and iii) connectivity management. The triangle in the framework represents the interconnections between these elements.

Single use of digital media   Integrated use of digital
                                                                     media

Connectivity   Connectivity (frequency;
(time;centrality)   volume)

Focus on a single use of   Combining digital and
space   physical spaces
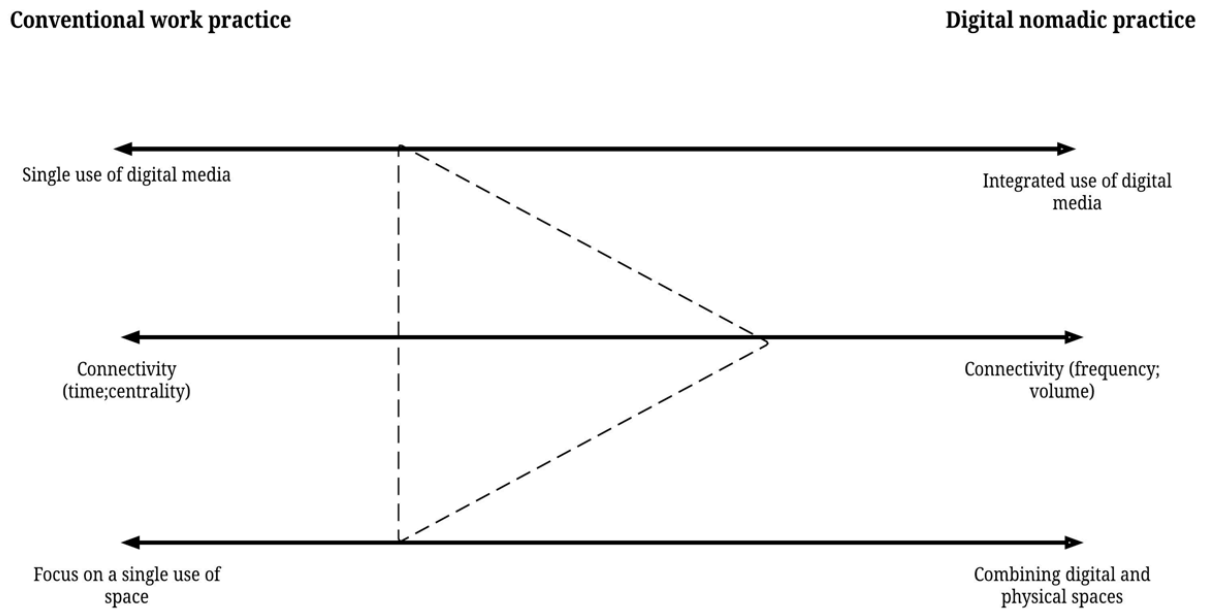
Figure 2: Conceptual framework of digital nomadic practice

The next section focuses on the description of the elements of the framework.

2.7.1 The interplay between the dimensions through affordance theory

Affordance theory is a useful lens to understand the material properties of technologies that afford different possibilities for actions, depending on the context in which they are used (Zammuto, 2007). Additionally, they are unique to individuals who perceive these affordances in different situations (Treem and Leonardi, 2012).

Digital media afford positive and negative outcomes, and in this case it will be seen in a relation to connectivity. Previously, connectivity is seen as a paradox; enabling individuals to be flexible and autonomous; however, being connected also means to be constantly available, which was previously linked to interruptions in the workflow (Mazmanian, 2010). For this reason, the conceptualisation of the digital nomadic practice through connectivity aims to understand the appropriate levels of connectivity that digital nomads need in an attempt to engage in the digital nomadic practice.

Although, digital media are situated and influenced by organisational or social practices (Schmidt, 1999), individuals have a free will to act on the affordances, and cultivate their coping strategies based on what is it required from them within an organisational setting. In

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other words, individuals have different expectation of does being connected mean to them (Mazmanian, 2013; Richardson and Benbunan-Fich, 2011). For instance, previous studies assumed that when individuals use social media, their needs have been met, but little attention is paid what the technology means for the user and how it fits within their work practice (Azad, 2010).

The increasing connectivity is associated with using multiple digital media in conjunction. This raises a questions of user adoption of IT, which is one of the most studies topics in the IS literature (Venkatesh et al. 2007). Recently, scholar moved away from the early focus of capturing digital media as productivity tools and started to study ICT as communication and socialisation tools (Benbasat, 2009). Yet, these studies continue to treat IT in isolation instead of focusing on its relationship with other tools. Hence, through nested affordances the aim is to uncover how are digital media and its affordances used in relation to other technologies.

Since the interactions of digital nomads are occurring predominantly in digital spaces, physical spaces have often been neglected. It is important to note that the physical connections have not been totally supplanted by digital media, which holds for both personal and business relations (Fayard, 2007), and there is a *"need for people to be involved in some form of more tangible community"* (Caruthers and Heath 2001, p. 51). The previous justification of nomadic work, which was based on the idea of place-less space, is not satisfactory. Additionally, physical spaces are understood in terms of its materiality and structure and it guides the activities of individuals (Liegl, 2014). The office space has recently undergone through a major change in terms of its layout, which permits the emergence of new work styles and interactions (Millward, Haslam and Postmes, 2007). For instance, the open space layout supports creativity, knowledge sharing, and socialisation where the organisational identification is strengthened and community is built (Fayard and Weeks, 2007).

Recent studies focusing on the increased digitisation state that the physical space and digital space are becoming blurred (Jordan, 2009; Whyte, 2013). This is because the interactions are mediated through digital media, and these tools potentially change the meaning of physical spaces and it alters the way individuals interact and orient with others who are co-present (Ciolfi et al. 2014). Therefore this blurring serves as an impetus for understanding both spaces as Gustavo Cardoso (in Castells, 2001) claims, *"we are in the presence of a new notion of space, where physical and virtual influence each other"* (ibid, p. 131).

Affordance theory helps to analyse the opportunities and possibilities for action in a physical setting, because elements of the physical environment of a workplace have an impact on the behaviour of individuals (Gillespie, 1991). Previous research has discussed and aimed to understand the theory of affordances in explaining how physical and social aspects of an environment interact and shape a particular behaviour (Fayard and Weeks, 2007). Hence, the understanding of a physical space in a digital nomadic practice creates an opportunity to extend the current studies, which have excluded physical space in relation to work that is flexible and not necessarily relies on physical boundaries.

2.8 Summary of literature review

This chapter presented an extensive review of the literature, by drawing on various perspectives associated with nomadic work, technology choice and use, connectivity literature and affordance theory and explored some of the challenges on the subject of this thesis. The main argument was formed around capturing digital nomadic within an organisational setting.

By examining these studies more closely, it led to an identification of the theoretical gaps that are accomplished within this research. The outcome of the literature review is aimed at forming the research questions and informing the conceptual framework. Additionally, in the last part of this chapter, the researcher showed the conceptual framework in Figure 2, which presented the various approaches and discourses with the intention of conceptualising the digital nomadic practice. The following Chapter 3 discusses the methodological orientation applied in this research, which relies on the qualitative case study research.

3 RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the philosophical assumptions underpinning this study as well as introducing the methods and techniques used in this thesis. The purpose of the research design is to guide the researcher through the research process in a logical way, to establish boundaries of the research and to support an effective way of addressing the research questions. It can also help the researcher to recognise and respond to possible complications that can occur during the research process (Miles and Hubermann, 2014).

The study of digital nomadic practice is focused on individuals using digital media simultaneously, who conduct work in digital and physical spaces and manage their connectivity within an organisational setting. It is positioned within the information systems discipline and the research methodologies in the management of information systems vary (Bariff and Ginzberg, 1982; Dickson, et al., 1982; Mendelson, et al., 1987). During the proceedings of an international federation for information processing colloquium (Mumford et al. 1985), various methodologies were discussed including debates on subjective versus objective, quantitative versus qualitative, positivist versus interpretivist, and critical versus non-critical modes of information systems inquiry. The outcome of this colloquium was oriented towards 'methodological pluralism' (Mumford et al. 1985).

Hence, in the IS research there is no 'one best theory' that can be seen in the other management disciplines and there is relatively open space for different methods of inquiry and various theoretical perspective, research strategies, and methods of collecting and analysing data (Robey, 1996). Generally, each school has their 'house style methodology', which is evident in European, American or Scandinavian school of thought (Galliers, 1991).

In this research, the method of investigation is qualitative in nature and takes an interpretive perspective, to gain richer insights in answering the research questions (Miles and Huberman, 2014). The main research question and the sub questions were as follows:

How does the digital nomadic practice emerge within modern organisational setting?

     i.   *How do individuals simultaneously use multiple digital media to conduct their work practice?*
     ii.   *How do individuals manage the intersection between digital and physical spaces?*
     iii.   *How do individuals use digital media in order to manage connectivity and minimise interruptions?*

In this regard, this study is likely to be exploratory because the variables are unknown and *"the specific variables and concepts are gradually developed through the research process"* (Charmaz, 1995, p. 32). The chosen methodology is a case study research, and the data was collected using semi-structured interviews, observations and document analysis. This will be further discussed in the rest of the chapter.

This chapter continues with the discussion of the philosophical stance mentioned in Section 3.2, which evaluates the main differences between positivism and interpretivism. Further, Section 3.3 provides an overview of research strategies (observation, experiments, action research, archival analysis, survey methods, histories or case studies) and illustrates the application of case study research methods in this thesis. The advantages and limitations of the case study approach are also discussed. Section 3.4 explains Eisenhardt's (1989) case study research procedure for theory building, including in-depth data collection and analysis process, showing how these different steps of conducting research were applied in this case. Section 3.5 discusses the generalisability of this study, followed by Section 3.6 that discusses the reflexivity, and Section 3.7 focuses on ethics. Finally, Section 3.8 provides the summary of this chapter.

3.2 Philosophical underpinning

This section describes the differences between interpretivism and positivism and Table 5 summarizes the variations in ontology, epistemology and methodology of each philosophical tradition. Further, thinking about philosophical stance is important because every research is influenced by epistemological and ontological stance of researcher and behind every method there is a belief (Kaplan et al. 2004).

Philosophical underpinning	Positivist	Interpretive
Ontology Nature of 'being' Reality	Direct access to the reality A single reality;	No direct access to the reality Multiple realities
Epistemology Relationship between reality and research	Obtaining objective knowledge Focus on generalization and abstraction Governed by theories and hypotheses	Understood through perceived knowledge Focus on the specifics Understanding specific context
Methodology Focus of research The role of the researcher Techniques used by the researcher	Descriptions and explanation The researcher acts as an external observer Distinction between feeling and reason Quantitative Statistical	Understanding and interpretations Researcher is active and experiences what he/she is studying Allow feelings to govern actions Qualitative Hermeneutical

Table 5: Positivist and interpretive philosophy. Adopted from: Baroudi and Orlikowski, 1989; Kaplan and Duchon, 1998; Easterby-Smith, 2012.

Epistemology is concerned with the nature of knowledge (Easterby-Smith, 2012) and how knowledge can be created, acquired and communicated. Researchers have different views of what is considered to be 'real'. Positivists consider reality as being stable, described in the nature of laws and regularities (e.g Hempel, 1969, Pugh and Hickson, 1976; Morgan and Smircich, 1980; Burrell and Morgan, 1979; Lee, 1991). An important aspect of the positivist approach is to undertake the research from an objectivist perspective, in a 'value-free way', by eliminating 'feelings' of the researcher (Kolakowski, 1972). Further, the assumption is that *"the researcher is independent of and neither affects nor is affected by the subject of the research"* (Remenyi et al., 1998, p. 33).

Ontology refers to the reality, which the researcher aims to address by asking 'what is', 'what

constitutes reality' or 'how it is' (von Foerster, 1996). The position adopted by positivists is realism, which claims that the world is external (Carson et al. 1988) and there is a single objective reality regardless of the researcher's perspectives, attitudes or beliefs (Hudson and Ozanne, 1988). Positivist researchers are detached from participants by remaining neutral in their emotions and feelings (Carson et al. 2001). Statistical techniques are central to positivist research usually followed by rigid research techniques (Easterby-Smith, 2012).

It is important to acknowledge the positivist philosophy, as this approach to research has been favoured in the US leading journals in IS from 1970s, where the statistical methods were used to understand information systems (Galliers, 1992; Miles and Huberman, 1994; Walsham, 1995). However, I will not elaborate on this debate further because positivism has not been adopted in this research and it assumes that knowledge consists of facts, and it would not be suitable for studying the digital nomadic practice.

Instead, an interpretive philosophy has been chosen in order to understand digital nomadic practices and how individuals choose and use various technologies simultaneously to collaborate in digital spaces, and manage their connective levels within an organisational setting. In particular, it was important to look at the digital nomadic practices by going to the field and gaining in-depth data from the participants that were linked with their day-to-day experiences.

From philosophical view, the interpretive research can be seen from different categories such as phenomenology, ethnomethodology, philosophy of language and hermeneutics, symbolic interactionism (Myers, 1997), which will be further described. Phenomenology in IS can be found in the work of Boland (1985), and it is associated with understanding phenomena from participants' perspective and to describe the reality as it is experienced by individuals (e.g Thoresen, 1999; Boland, 1985). Additionally, hermeneutic is associated with interpretation of text and can be seen in the work of Boland (1991) followed by Westrup (1994) and Myers (1995). Lastly, ethnomethodology is concerned how people make their social world that is dynamic and unpredictable and can be find in the work of Suchman and Trigg (1991).

The subjectivist perspective embedded in the interpretivist view means that it is important to explore the subjective meanings of individuals in order for the researcher to understand their actions. This is in line with Orlikowski and Baroudi (1991) who further comment on the

interpretive research approach and especially on the subjective meanings, they say:

"Interpretive studies assume that people create and associate their own subjective and intersubjective meanings as they interact with the world around them. Interpretive researchers thus attempt to understand phenomena through accessing the meanings that participants assign to them" (ibid, p.5).

Similar to Lincoln and Guba (1985) and Orlikowski and Baroudi (1991), I believe that the reality is socially constructed meaning there are multiple realties, and each individual has different interpretations of their situations depending on their view of the world.

Besides the presence of these two philosophies, critical theory emerged as a critique of positivism and interpretivism. Similar to intepretivism, critical theory recognises that research is not value free and the reality is produced by individuals who consciously act to change their social and economic circumstances (Bhaskar, 1989). There are range of ontological and epistemological positions, which include the Frankfurt school of critical theory (Horkheimer, 1976), actor-network theory (Latour, 1991), Marxism (Marx, 1974), feminist theory (Wajcman, 1991), work of Bordieu (1990) and others. IS research has been dominated by the Frankfurt school and the work of Haermas and critical theory has been adopted by several IS researchers (e.g. Hirschheim and Klein, 1994; Ngwenyama and Lee, 1997) and often viewed as giving rise to IT on IS failure (e.g Bartis, 2008), IS and gender (e.g Trauth, 2006, Kvasny, 2002; 2005) or power and politics associated with implementation of IT (Silva and Hirschheim, 2007). Critical researchers acknowledge that in IS research there was a lack of radical social theories and studies were mainly organisation-based (Alvesson and Deetz, 2000; Deetz, 1992; Adler, 2002), and with this perspective there was a shift from technical to interpretation of social actions, concerned with socio-technical fit (e.g Mumford, 1983). This was evident in the Scandinavian traditions that helped to lay foundation to the critical research in IS development and use (e.g Ivari and Lyytinen, 1998, Bjerknes and Bratteteig, 1995).

I have reviewed different philosophies – positivism, interpretivism and critical theory - in relation to IS, because each philosophical belief influences the research strategy. The next section provides an overview of the research strategies associated with each philosophy, which will be compared to each other and the case study strategy will be justified.

3.3 Overview of research strategies

Each of the research philosophies conform to the research strategy i) positivism – experiments, surveys; ii) interpretivism – observation, ethnography, case study, history, archival research; iii) critical theory – action research.

Since this research is considered with analysing the digital nomadic practices by understanding technology choice and use and is much more connected to individuals and their actions, case study has been chosen as an appropriate research strategy. It will be further explained and compared to other research strategies. Additionally, this is part of what Yin (1994) calls instrumentation, which involves identifying appropriate data gathering methods by reviewing strengths and weaknesses of the various methods.

The choice of a particular research strategy depends on i) the research questions; ii) the control of the researcher over events; iii) the focus on either contemporary issues or historical events (Yin, 1984). Table 6 provides an outline of each research strategy type on the left, and each of the aforementioned conditions.

Strategy	Form of research question	Requires control over behavioural events	Focuses on contemporary events
Experiments	How, why	Yes	Yes
Survey	Who, what, where, how many, how much	No	Yes
Archival analysis	Who, what, where, how many, how much	No	Yes/no
History	How, why	No	No
Case study	How, why	No	Yes

Table 6: Research strategies (Yin, 1984)

The research questions proposed in this research could have been approached by using different research strategies, but it might not have revealed the amount of detail required to understand how individuals use various technologies simultaneously, control their connectivity and accomplish work in different digital and physical spaces. Further, the research questions starting with 'how' and 'why' are explanatory in nature and lead to the use of experiments, histories, and case studies (Miles and Huberman, 1994). While histories are used for phenomenon occurring in the past, the case study and action research are preferred for capturing contemporary issues and addressing practice-based problems (e.g Benbasat,

Goldstein and Mead, 1987; Mumford, 1979, Baskerville and Wood-Harper, 1996). During the time of data collection, many organisations were adopting enterprise social media to increase organisational-wide collaboration, and connections between individuals. This has been notable in few of the research articles that have explored the novel features of social media (e.g Leonardi 2012, Mazmanian, 2013), but have not considered that the traditional and new digital media coexist together. Hence, the research questions in my thesis are oriented towards understanding the current research issues that were acknowledged both in academic journals and conferences, and in practitioners' articles.

In IS field, empirical studies were mainly suited to the design, development and implementation of technologies. Following this criteria, action or a case study research are forms of applied research where the aim is to deliver a practical value for individuals whom the research is intended for (Baskerville, Wood-Harper 1996; Baskerville and Myers, 2004); and when the research aims to create practical outcomes to inform the existing theory (e.g Gibson, 1975; Keen, 1974). The difference between action research and case study is that the researcher doing action research is directly involved in the research, acting as an active participant and the questions and problems come from the initiative of the researcher (Baskerville, 1999; Baskerville and Wood-Harper, 1996). In this case, the researcher acted as an observer and reported on the organisational changes that occurred with the implementation of a new organisational strategy that was aligned with adopting new technologies, redesigning the workplace and creating policies to suit new working styles.

Moreover, Yin (1994) states that case study should not be confused with ethnographical methods, as case studies are conducted within a certain time frame whereas ethnography takes a long period of time requiring detailed observational evidence (Myers, 1997). Ethnography was not feasible in this research because the organisation would not allow the researcher within the premises for a long period of time. The reasoning behind this is that employees often shift between different countries and do not have a strong presence within the organisational premises.

The next section examines the advantages and limitations of doing a case study research.

3.3.1 Why case study research?

In order to understand digital nomadic practices it was important by going to the field and gaining in-depth data that are linked with the experiences of individuals. Hence, case study research is advantageous and favoured in IS research because of its advantages for i) allowing for thick descriptions of the phenomena under study; ii) understanding behaviours or processes that are little understood; iii) capturing phenomenon in its natural setting (Benbasat, Goldstein and Mead, 1987).

There are many definitions of a case study, I follow the interpretation by Benbasat and Zmud (1999) who summarises the main aspects of a case study:

> *"..[it] examines a phenomenon in its natural setting, employing multiple methods of data collection to gather information from one or a few entities (people, groups, or organisations). The boundaries of the phenomena are not clearly evident at the outset of the research and no experimental control or manipulation is used"* (ibid, p. 370).

Central to the case study research design is deciding weather to rely on a single-case or multiple-case. Further, a single case study is used when the research access is unusual or examples are extreme (Yin, 1994, Benbasat, Goldstein and Mead, 1987). In this case, I had an opportunity to conduct a research in an organisation, which develops and sells technologies that were used internally. Also, employees were very technologically savvy and were using the latest technologies in their workplace. Focusing on a single case study allowed me to richly describe the phenomenon (Siggelkow, 2007) and for the purpose of this PhD it would not be feasible to do a multi-case analysis. Although, multi-case analysis could have been useful in terms of providing comparison, better exploration of research questions and more generalisable results, some state that the quality of the case could be affected (Eisenhardt and Graebner, 2007).

The 'thick descriptions' of the digital nomadic practice allowed the researcher to access multiple interpretations, which would have been lost with the quantitative research strategies (Yin, 1994). For instance, when I interviewed the employees I could ask them to elaborate on their answers, or in case of on-site observation there were several instances when employees showed me how they use various digital media to satisfy their communication goals. Additionally, case study is also beneficial for topics that are newly emerging and phenomenon

that has been investigated sparingly (Walsham, 1995a). Since enterprise social media is currently being implemented in organisations, it is vital to understand how these tool are used, weather it helps employees to support their work practice, or if it impacts negatively by interrupting their workflow.

Beside the aforementioned advantages of case study research, a single case study has been subject to criticism related to i) selection bias; ii) external validity and generalizability in particular with case studies; iii) issues associated with methodological rigour (e.g Benbasat, Goldstein and Mead, 1987, Miles and Huberman, 1994).

A single case study has been criticised for what is known as selection bias, or in other words when the choice of the case biases findings of the research. This is tied with another limitations of a case study approach, which is associated generalizability of findings. If findings need to be generalised statistically then a case study approach is not suitable. Further, Miles and Huberman (1994) stated that case studies are not able to provide generalizability in terms of statistics, instead are especially advantageous for developing generalizable concepts (Pettigrew, 1985). For instance, generalizability from case study can be increased by strategically selecting cases, instead of seeking samples randomly (Seawright and Gerring, 2008). I attempt to compensate for this limitation by having carefully chosen the organisation that would be suitable and appropriate for this research, which is further elaborated upon in section 3.4.2. As Flyvbjerg (2006) says a properly used cases *"often reveal more information because they activate more actors… and more basic mechanisms in the situation studied"*. Also, I have provided detailed descriptions of the case in chapter 4, which I hope will serve as a basis for readers who can see if my findings are applicable to their individual contexts.

Another limitation of case study research has been associated with the methodological rigour. As an instance, Yin (2009) sees the concern in the absence of systematic procedures for case studies. He further states that a lack of rigor is less likely to occur if the researcher follows other strategies and specific procedures. For this reason, the framework by Eisenhardt (1989) for theory building has been used to create methodological guidelines and is thoroughly analysed and discussed in the Section 3.4.

The limitations of case study research were discussed, and it was clear that as with other research methods it involves necessary trade-offs. I have shown that the advantages of using case study in studying digital nomadic practices outweigh its limitations. The next section

explains the design of the research process, which elaborates on the rationale behind using Eisenhardt's (1989) eight-step framework for theory building.

3.4 Eisenhardt's eight-step framework

While there is a large body of literature describing a good practice in case study research (Miles and Huberman, 1994; Yin, 2013), Eisenhard's (1989) eight-step framework was used as a practical approach specifying steps of actions that need to be executed in a certain order. While some argue that having an order in interpretive studies can be seen as *"violating the emergent nature of interpretive research"* (Klein, 1999, p. 68), I believe that it is vital to have some principles in the research process. Writing about the research process in steps helped me to develop a way of thinking and critically analysing what was I doing in each step and judging what needed to be done in the next step.

Eisenhardt's (1989) eight-step framework is a combination of the grounded theory approach (Glaser and Strauss, 1967) and the comparative case study approach (Yin, 1994) designed for empirical research in an organisational context. She further comments:

> *"there is substantial confusion about how to combine [theories], when to conduct this type of study and how to evaluate it"* (ibid, p. 534).

Table 7 depicts the research process including the main steps, and with it associated activity and outcome in each step. This table describes the research process as linear, but adhering to the principles of grounded theory, hence the data analysis started in parallel with the data collection. The following steps are described in more detail: ii) selecting cases, iii) crafting instruments and protocols, iv) entering the field, v) analysing data, vi) shaping hypothesis, v) enfolding literature, vi) reaching closure.

Step	Activity	Outcome
Getting started – formulating the research problem	Establish the phenomenon in terms of its practical relevance (Glaser and Straus, 1967) State the problem and why it was important to study it (Van de Ven, 2007) Identify gaps in the literature (Urquhart, 2007)	Digitisation pressures organisations to implement new technologies, which coexist with the traditional ones. These technologies enable connections and collaborations between employees, who work in a dispersed manner. However, technologies might impact on individuals in a negative way and hence, it is vital to understand how employees cope with being connected; choose and manage various technologies. I have identified gaps in the literature associated with choosing and using many different tools simultaneously, managing connectivity, and created research questions that would narrow down the scope of this research.
Selecting cases – single case study design	Select case study site that is relevant and feasible (Yin, 2003)	I have selected an IT organisation in London as a relevant case, which designs technologies and these are also used internally. It supports employees in working flexibly and redesigned its workplaces to suit the new ways of working.
Crafting instruments and protocols	Triangulate data using various data collection methods (Charmaz, 2006)	Qualitative data collection method is used over large-scale quantitative method and the data collected through interviewing, observation, and document analysis was triangulated to find any similarities and differences.
Entering the field	Gather rich qualitative data through interviewing and observations (Charmaz 2006)	I conducted 37 interviews, 4 on-site observations and obtained company documents and reports.
Analysing data	Code the data line by line to identify the core categories (Strauss and Corbin, 1990) Adhering to the principles of grounded theory, categories emerge from the data (Strauss and Corbin, 1990) Make constant comparison between data (Strauss and Corbin, 1990)	I followed the coding principle of Strauss and Corbin (1990) and its stages of *open, axial, selective* coding. In the initial stage, many different codes emerged that had to be organised, changed and deleted. These were then put in various categories and the relationships between these categories emerged. In the last part of the coding process, five distinct categories emerged. The data analysis was ended when the analysis revealed similar incidences and events occurred over and over.
Shaping hypotheses	Iterative tabulation of evidence for each construct; Search evidence for 'why' behind relationships.	Analysed the relationships between the connectivity, work conducted in physical and digital spaces, and the use of digital media simultaneously.
Enfolding literature	Engage with other theories for theory building, and the similar and different theories are used for comparison Glaser and Strauss 1967)	Compared the core concept of digital nomadic practice with the literature on nomadic working and mobility literature (e.g Wajcman, 2010, 2012; Lyytinen 2010; Kolb, 2012).
Reaching closure	Stop adding cases when theoretical saturation is reached (Glaser and Strauss 1967)	I stopped adding case when there were no new insights into the research.

Table 7: Eisenhardt's eight-step model. Adapted from: Eisenhardt (1989)

3.4.1 Getting started

This research project is influenced by my interest in understanding new ways of working, and the impact of social media on employees. Since new digital platforms and devices are emerging in an organisational context, there are increasing expectations of employees to be constantly connected. This was supported with the discussion in academic and practitioners conferences, where the discussions were oriented towards understanding the new technology use and its impact on individuals. I build on this literature among others (Wajcman and Rose, 2011; Kolb, 2012; Mazmanian, 2012), who highlighted the impact of digital media on individuals. I realised that it was vital to analyse how new technologies are being used, if they are preferred over the traditional tools such as email, within an organisational setting and identified that more studies are needed on this topic. The gaps in the literature were concretized to the main topics of nomadic work, technology adoption and connectivity literature.

I have proposed research questions, which were crucial to keep the discussions coherent, rich and rigorous (Creswell, 2012). The research questions were relatively broad and were modified several times throughout the research process, which is common as Eisenhardt (1989) states *"no construct is guaranteed a place in the resultant theory... the research question may shift during the research"* (ibid. p. 536).

The next section describes the selection of the case site and individuals who were interviewed for this study.

3.4.2 Selecting cases

I will start with the discussion on the case selection site that was based on two categories i) feasibility and ii) purposefully selected case (Miles and Huberman, 1994). I have considered feasibility in terms of the practical issues associated with accessibility to an organisation. There were some challenges to secure a company that was willing to participate in the study. After some failed approaches, the researcher secured access to the IT Company, Redco, through a key informant, an IT manager. This process of gaining access was rather lengthy; several emails over three-month period were exchanged to agree on the scope and objective of this research. In particular, it was necessary to agree whom to interview and which documents need to be accessed beforehand.

The second category included purposefully selected case that would be relevant and useful for this thesis. Redco provided several benefits; it has variety state-of-art digital media for employees to use, and they were skilled at using it for accomplishing work tasks. The changes witnessing in modern organisations have been implemented in this particular company through a 'Digital nomadic strategy' (the name has been changed to preserve the anonymity of the company). It has redesigned its offices to suit all the working styles supported with digital media and through flexible policies. The chosen location for the fieldwork was London because the work environment is inclined towards the Western working style, with the corporate system based on the flexible working arrangements.

The participants were selected based on their roles and positions within the organisation, covering a variety of geographical regions, functions and levels of seniority and thus gaining a broader understanding of the context. In collaboration with the key informant in Redco, he arranged all the interviews beforehand and hence the sampling was purposive at first. Further to this, on visiting the premises of the organisation, the researcher also gained access to the personal network of the interviewees who suggested their colleagues *"who fit the bill"* (Patton, 2005). This is also known as the snowball or chain referral sampling method that has been popular within the qualitative research. This helped the researcher to increase the sample size and to locate information-rich participants (Biernacki and Waldorf, 1981).

The next section describes methodology, theory and data triangulation.

3.4.3 Crafting instruments and protocols

Eisenhardt (1989) states *"[data] triangulation made possible by multiple data collection methods provides stronger substantiation of constructs and hypotheses"* (ibid, p. 538). In other words, using various methods for data collection allows effective triangulation. In this research, I preferred using qualitative rather than large- scale quantitative methods, and hence I used various qualitative data collection techniques such as interviewees, on side observation and document analysis. This allowed me to get a full understanding behind the technology selection and strategies that individuals employ in order to manage connectivity. Also, various employees within the company were interviewed and their practices were observed, which also helped to strengthen the findings (Patton, 1990, cited in Yin, 1994, p. 92). Overall, triangulation enabled the researcher to obtain breath and depth of collected data (Todd, 1979);

and gain a more comprehensive understanding of the phenomenon under study (Miles and Huberman, 1994). Figure 4 depicts the methodology, theory and data triangulation that was applied within this research (Mathison, 1988).
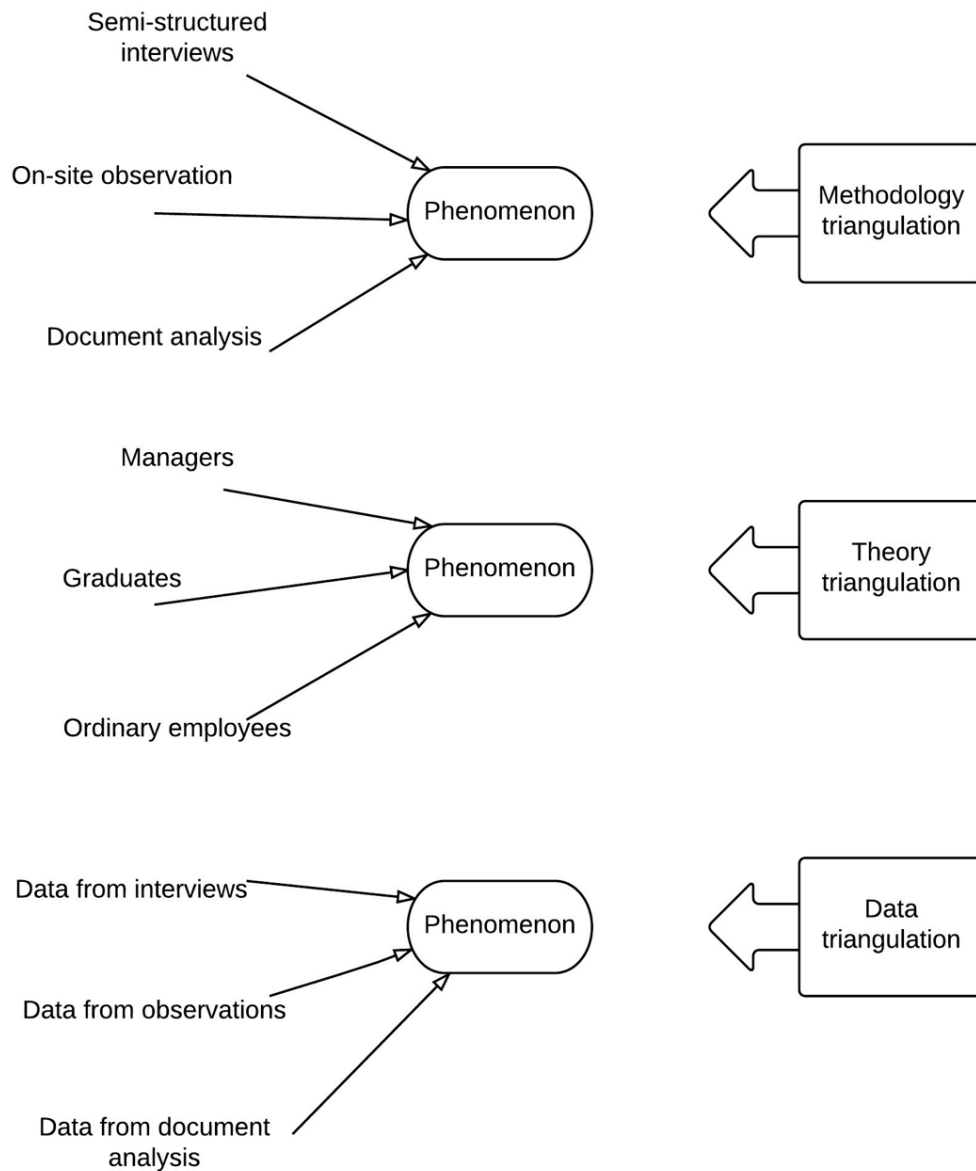

Figure 3: Multiple triangulations. Adapted from: (Eisenhardt, 1989).

The next section describes the details about the length of the data collection period, the number of individuals interviewed, and their demographics.

3.4.4 Entering the field

Before entering the field, I gathered prior knowledge about the setting, the participants who would be interviewed and became familiar with the language used in the corporate context (Wolcott, 1995). Based on the experiences gathered during the past two decade from studying nomadic workers it was clear that interviews offered significant strength for studying mobile practices. For this reason, the main data collection technique included the semi-structured style of interviewing.

Various types of interviews exist, depending on the nature of the interview questions (Kvale, 2008). On one side of the opposing poles is a structured interview technique with predetermined questions; on the other side is the unstructured interview technique, which is a conversation without pre-set questions (Opdenakker, 2006; Robson, 1993). In line with the explorative nature of the study, semi-structured interviews with open-ended questions have proven to be the viable method. Additionally, semi-structured interviews offer some degree of flexibility, but also with set of questions prepared beforehand (Saunders et al. 2003). Interview technique is beneficial because the interviewer and interviewee can engage in a direct conversation, in a natural setting and in this case it was a workplace (Kvale, 1996; 2008). Kvale (1996) further notes;

> *"The qualitative research interview is a construction site for knowledge. An interview is literally an inter view, an interchange of views between two persons conversing about a theme of mutual interest"* (ibid, p. 14)

Also, qualitative research is seen as an effective way of getting insights into the practices of nomads (Kvale, 2008; Mack et al., 2005), particularly in the case of face-to-face interviewing there is a larger opportunity to gain depth of meaning and understanding in a context (Gillham, 2005), which plays an importance role within this research.

Altogether, I conducted 37 interviews and some of them were done via WebEX or Telepresence because of the geographical barriers between the interviewer and interviewee. In this way, the researcher was able to reach an international audience and broaden the access to individuals within the IT Company, which diversified the sample. The list of the interviewees is available in Appendix A, Table A1, which includes the anonymous respondent, the position within the company, the country of work, demographic details, interview method and the

hierarchical level within the organisation.

The period of the data collection process span over a three months period, from September 2014 to December 2014, at the organisation's premises in London. Each interview lasted between 30 to 60 minutes. The length was adjusted according to employees' will and free time to participate. The interviews were recorded and transcribed, as shown in Appendix A, Figure A3, and the non-recorded ones were summarised after the interview sessions, and notes were taken during the interviews.

Many say that creating a relaxed atmosphere between interviewee and interviewer helps to reduce pressure and biases (Williams, 1964). The researcher stayed on the premises for over 1 week period and observed the interviewees, who became more open to answering questions, especially during lunches and coffee breaks. The interviewer made an effort to help the interviewees to open up, so they would freely describe their perceptions about things they might initially consider to be irrelevant to mention. Further, Gomm (2008) refers to this situation as a *"face-producing interaction"* and comments on the importance of developing trust between interviewee and interviewer:

> *"The argument is that only by developing intimate, trusting and empathetic relationships will respondents feel able to disclose the truth"* (ibid, p. 230).

To support the interviews, a detailed research protocol was crafted to remind the researcher of the procedures to follow, and to ensure consistency across the data collection (Schultze and Avital, 2011). When the participants agreed to be interviewed, the interviewer explained clearly the purpose of the research (Gummesson, 2003). The interview questions were grouped thematically and were tailored depending on individuals' status or position within the organisation. The interviews progressed depending on the previous response and the questions asked focused on the experiences of individuals with digital media and how they manage connectivity. Further, the researcher was interested in gaining insights into the organisational setting, the culture, and the strategies for enterprise social media implementation. It was reviewed and approved by supervisors and revised for better flow of questions.

Some researchers (e.g Al- Taitoon, 2005, Pica 2006) suggested combining more than one data collection method to study mobile workers and in particular they stated the advantage of doing interviews and observations. Hence, I conducted 4 on-site observations, by shadowing

employees and these observations complemented the interview data and provided valuable information. Observation was chosen because of its general advantages to provide thick descriptions (Czarniawska-Joerges, 2007) and in this case I was able to observe some of the usage of their tools within the organisational setting. This approach is well established in Information Systems research and is gaining popularity among researchers studying nomadic workers (e.g Horst and Miller, 2006; Levina et al. 2008, Vaast and Walsham, 2005).

I followed the employees throughout their working day, attended meetings, company conferences and listened to teleconference calls (Czarniawska, 2011). The conferences were useful to broaden the view and to understand the products that the company sells and has implemented within the organisation. Having attended the meetings, it was advantageous to observe the routine and non-routine tasks within their own social setting. Also, I observed the use of digital tools and how these supported the interactions between employees, and if any discrepancies or unexpected issues occurred. Brief field notes were taken, but the participants did not feel comfortable with the researcher's presence and thus the note taking was limited. The choice of data collection was constrained in time, access and financial resources.

In addition to interviewing and observation, I analysed many white papers, surveys and written reports provided by the organisation and which were of a great importance to *"corroborate and augment evidence from other sources"* (Yin, 1984, p. 81). There were also many reports of Redco publicly available and used to find the background on the company, its the products and obtaining up-to-date information.

It is not often a clear cut to separate the data collection from the data analysis process since the case study takes a longer period for completion. Eisenhardt (1989) states that building theory from case studies is *"frequent overlap of data analysis with data collection"* (ibid. p. 538), which is also a vital part of the grounded theory analysis. I started to analyse and make sense of the interview transcripts and field notes at the same time of the data collection process. The next section explores the data analysis process in a greater detail.

3.4.5 Analysing data

As Langley states, with the qualitative research process *"no analysis strategy will produce theory without an uncodifiable, creative leap, however small"* (ibid, 1999, p. 691). Accordingly, data analysis is an analytical process for the examination of phenomena that

enables the researcher to engage with the data that has been gathered (Klag and Langley, 2013). There is number of techniques that can be followed one of which is grounded theory. Glaser (1992) suggests that grounded theory methodology is *"a general methodology of analysis linked with data collection that uses a systematically applied set of methods to generate an inductive theory about a substantive area"* (ibid, p. 16).

The central aim of grounded theory is to consider 'all data' (Glaser, 2001), therefore in this research I paid attention to the existing literature, the view of participants, personal experience and historical information found in company reports. The process of coding in the grounded theory is associated with *open, axial and selective* and these stages are sequential not iterative (Corbin and Strauss, 1990).

Grounded theory approach of analysing data is frequently used in the IS literature, for example, to theorise the complexities of electronically mediated social context (Vaast and Walsham, 2011; Birks et al., 2013). Few of the benefits that grounded theory are the capacity of interpreting complex phenomena (Charmaz, 2014), application of social issues (Glaser and Strauss, 1967), suitability for socially constructed experiences (Charmaz, 2014) and no priori knowledge (Glaser and Holton, 2004; Glaser and Strauss, 1967). Also, grounded theory is known for theory building and suitable for exploring under-researched areas (Strauss and Corbin, 1990). I have familiarised myself with the grounded theory during my postgraduate training course. I am aware that there are several variations of grounded theory methodology, for instance; the 'Glaserian approach' Glaser (1992), Corbin and Strauss approach (1990, 1998) and the social constructivist approach (Charmaz, 1990, 2006). However, it is not feasible to discuss the difference between these three approaches and its differences in its methodological assumptions. I used the procedures proposed by Strauss and Corbin (1990) because of its detailed systematic method. The coding process is described further and is also shown in Appendix A in Figure A5.

3.4.5.1 Open coding

In this first stage of coding, Corbin and Strauss (1990) suggest several questions that are important to ask and hence I repeatedly asked myself the following: *"What is this data a study of? What category does this incident indicate?"* (ibid, p. 57). The open coding started with the microscopic examination by coding the data sentence by sentence, there was no paraphrasing or summarisation of thoughts in the description of the interviews. During this stage there were

no preconceived codes and the coding was entirely open, it was dynamic as some codes were re-named, deleted or added.

As an instance, I illustrate a section at random selected interview through the open coding. The further mentioned interview is part of a response of interviewee A10 (IT Manager for Europe, Africa and Middle East, Redco UK) and in particular an answer to a question 21. The interview question was: *"Can you get offline on WebEX so people don't disturb you, and how do you manage that?"* And the response was:

> *Yes, you can, you can. At times, I have to switch my WebEX off, so people don't know where I am. But also now I have got 80 emails sitting here that I have to reply to, which will happen. Last week, I was in a two-hour meeting, which was on [Redco] TV for [Redco] general meeting thing, coming from the US. Yes, I was listening to it, don't get me wrong, but I was doing emails at the same time. So at time you do have to multi-task. Now what am I doing, I have got some spare time today where I can do things, but I have got spare time during the week as well. But now looking at my calendar, I will have to cancel some meetings here. Otherwise I will be working in the evenings or on the weekends, because I had yesterday day off and had to shift things over.*

The researcher coded this response to the question 21 from interviewee A10 manually, dividing the response into sentences for each cell. The left column in Table 8 states the respondent's answer divided into sentences, and in the right column it shows the initial categorisation using open coding technique. The analysis of the sentences aimed to keep the respondents own words as much as possible, and this step produced over 150 codes.

Response divided into sentences	Analysis of the sentences
Yes, you can, you can. At times, I have to switch my WebEX off, so people don't know where I am.	Switching off WebEX to prevent contact
But also now I have got 80 emails sitting here that I have to reply to, which will happen.	Receiving too many emails
Last week, I was in a two-hour meeting, which was on [Redco] TV for [Redco] general meeting thing, coming from the US. Yes, I was listening to it, don't get me wrong, but I was doing emails at the same time. So at time you do have to multi-task.	Multi-tasking is part of daily job
Now what am I doing, I have got some spare time today where I can do things, but I have got spare time during the week as well. But now looking at my calendar, I will have to cancel some meetings here.	Too many meetings
Otherwise I will be working in the evenings or on the weekends, because I had yesterday day off and had to shift things over.	Working outside of the work hours

Table 8: Open coding analysis Adapted from: Glaser and Strauss (1998)

This step served as a basis to the comparative analysis, shown in Figure 4, within the open coding and "*the purpose of the constant comparative method of joint coding and analysis is to generate theory more systematically … by using explicit coding and analytic procedures*" (Glaser and Strauss, 1967, ibid, p. 102). Further, similar sentences were grouped together and during this process of data collection, coding and analysis it helped to narrow down large number of codes, eliminate any overlapping. As categories started to make sense, constant comparison forced the researcher to reflect on the data and to start conceptualisation by using memos. Additionally, memos were written to create links between categories and to establish the initial theoretical framework. Memoing was particularly advantageous as it helped me to keep my thoughts together and to create the narrative by seeing how the ideas fit within the overall research finings.
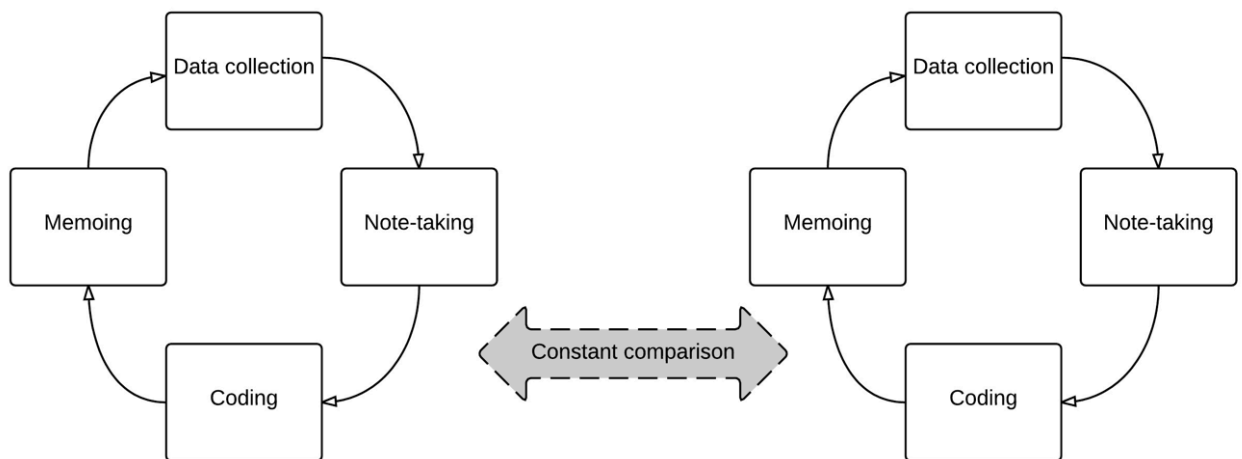
Figure 4: Constant comparison. Adapted from: Glaser and Strauss (1998).

Once the codes were organised, the next step was to move in the process of axial coding.

3.4.5.2   *Axial coding*

The second step of the grounded theory is axial coding, according to Strauss and Corbin (1998), which organises the data into a higher level of conceptual abstraction, and the categories were further developed in terms of underlying concepts and properties. At first, it was difficult to move the codes into higher categories, find relationships between these codes and discover the underlying story within these codes. Hence, I went back to the memos in order to develop a much broader picture of what the data meant. Two general questions proposed by Strauss and Corbin (1990) led the analysis in this stage, which were: *"What category or property of a category, of what part of the emerging theory, does this incident indicate? What is actually happening in the data?"* (ibid, p. 57).

When I reviewed the memos from the previous stage it was relatively straightforward to answer these questions. During this stage, I combined the initial memos with the new ones and wrote a conference paper (Kadnarova et al. 2014), which helped me to organise my thoughts and validate the findings of this thesis.

Also, I used the concept of affordances as a theoretical lens, which enabled me to see digital media as permitting action possibilities rather than purely leading to consequences (Markus and Silver, 2008). Affordances allowed me to examine digital media use within a specific context (Leonardi, 2011), in which they were realised. The use of theory in this case is

warranted as it allowed me to create an initial theoretical framework that informed the categories of the preliminary coding and took into account the knowledge from the previous literature (Walsham, 1995).

The next stage describes the selective coding, which is the last step in the data analysis.

3.4.5.3 Selective coding

The last stage of the grounded theory analysis included the selective coding, which unifies all the core categories based on the research objectives (Strauss and Corbin, 1998). For instance, as it is shown in Appendix A, Figure A5 I found that the main categories mentioned there put the concepts into a coherent whole, and hence became related to the existing literature (Bryant and Charmaz, 2007). The research shifted from purely understanding the choice and use of digital media, to understanding the consequences of using multiple digital media and with it associated connectivity.

3.4.6 Shaping research propositions

This step is highly iterative process to compare the emerging theory with the evidence from the findings in order to assess how well the theory fits with the data (Eisenhardt, 1989). In this instance, the key was to explain the digital nomadic practice and what it really entails. While digital media and technology affordance were seeing as a vital aspects, additional literature on connectivity and physical place emerged and hence it was important to understand the relationship between these concept to conceptualise digital nomadic practice.

This process of shaping proposition is more individualistic in theory building because researchers cannot rely on any statistical methods, but I displayed the evidence from findings by applying certain standards. I have included enough citations and quotes in order to understand the digital nomadic practice and it was an important way of ensuring internal validity within this research.

The next step describes the comparison of the findings with the current literature.

3.4.7 Enfolding literature

The main aspect of theory building was to compare the emergent concepts with the current literature (Eisenhardt, 1989). In pursuit of this objective, I analysed each theoretical concept

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that emerged and compared it to the previous research in order to analyse the added insights into digital nomadic practice. For instance, previously nomadic work was based on the premise of moving from one place to another, but I have found that being nomadic does not necessarily entail any movement. Further, few authors suggested to analyse the interactions of individuals and how they interact in a nomadic environment (e.g Lyytinen, 2002; Sorensen, 2002; 2008), my study showed that these interactions took place in both digital and physical spaces, supported by using multiple digital media simultaneously. The findings in this study were compared and contradicted with other streams of literature, e.g. technology adoption, connectivity and nomadic work. I found that focusing on the digital nomadic practice and connectivity brought novelty and new insights to the current literature within various research disciplines.

3.4.8 Reaching closure

It is difficult for a researcher to know when to stop adding interview cases and when to end the comparison between theory and data (Eisenhardt, 1989). The interviews were stopped when the research reached theoretical saturation, and it happens when further information would add a minimal learning impact (Eisenhardt, 1989, Glaser and Strauss, 1967). In this research, the researcher stopped the data collection when she had a sufficient number of interviews to clearly explain the concept of digital nomadic practice considering the time available for this PhD. In practice, it is hard to decide when to end the data collection and for this reason, the researcher needs to plan in advance the minimum number of cases to be reached, which was done in this case. A final remark to this research was to provide implication for practice and recommendations for future research, which will be highlighted in Chapter 6.

3.5 Reflexivity

It is important for researchers to be reflexive of their role within the research process in particular since this research used qualitative data collection methods obtained through interviews and observations, which raises concerns relating the subjective bias. Previously there have been studies that acknowledged how to carefully design interview protocols (e.g Gillham, 2000; Fellows and Liu, 2002) in order to design questions that reflect the individuals under research. However, subjectivity cannot be excluded from the research process, and in particular it is vital to acknowledge researcher's conscious and unconscious biases (Garfinkel,

1967; Guillemin and Gillam, 2004). Further, because of these biases, the researcher might have a tendency to focus on certain viewpoints or his/hers values, which might influence the direction of the research. Therefore, this opens the possibility of misjudgements. For example, I am white, female researcher with a background in social sciences and have familiarity with the interpretive view of scientific inquiry, which might influence how I interpret and obtain the data. As (Descombe, 2003) further notes that interviewees respond differently depending on how they perceive the researcher, and he continues:

> *"in particular, the sex, the age, and the ethnic origins of the interviewer have a bearing on the amount of information people are willing to divulge and their honesty about what they reveal"* (ibid, p.184)

Embracing these concepts allowed me to be increasingly sensitive that my presence and conscious and unconscious biases might influence the accounts of observed and analysed phenomena (Mead, 1967). The inability of a researcher to acknowledge his/her role in observations or interviews introduces observer bias, which is regarded as *"weak objectivity"* (Kaplan, 1984). The necessity lies in developing strategies aiming to democratise the situations and *"to inform the natives of their options, to make them participants in the account of their activities, and so forth"* (Haraway, 1988, p.164). The next section describes the validity, reliability and generalizability of the research that needs to be considered.

3.6 Validity and reliability of the research

Case studies have been criticised of the non-representativeness and the lack of statistical generalizability. Further, the richness and the complexity of data means that it is often prone to 'researcher bias' because it is open to different interpretations (Confrod and Smithson, 1996). Also, it has been criticised for the lack of generalizability (Pettigrew 1985), and Walsham (1993) argues that validity of case studies from interpretive epistemological stance is based on *"plausibility and cogency of the logical reasoning applied in describing and presenting the results from the cases and in drawing conclusions form them"* (ibid, p. 15).

Validity is a concept defined as *"the accuracy and truthfulness of the findings* (Altheide and Johnson, 1997, p. 487). Many researchers have adopted their way of enhancing the quality and rigor of their research (Morse et al., 2008; LeCompte and Goetz, 1982). For instance,

LeCompte and Goetz (1982) focused on the internal validity (findings represent the reality) and external validity (generalisability of the findings); while others have introduced different labels to the same concepts, for example, Guba (1979) proposed two criteria for assessing validity by – credibility (findings are believable) or transferability (findings are applied to other context).

The focus on validity is vital for the research that aims to be professional, accurate and conducted transparently. Importantly, Bulmer (1979) further comments on the validity within qualitative research and states that;

> *"qualitative researchers try to achieve validity not through manipulation of variables but rather through their orientation towards, and the study of, the empirical world" (ibid, p.49)*

One of the benefits of qualitative research is that the *"data are closer to the research field"* than in quantitative research, and in qualitative research, *"opinions and views of the research subjects are considered; data is closer to reality; and a successive expansion of data is possible"* (Lamnek, 1988, pp. 154-9). In this study, I followed the guidelines for ensuring internal and external validity according to the concept by Kidder and Judd (1986) in Yin (1984, p. 34) and focused on the validity – construct, internal and external, and reliability, which is discussed in the Table 9 below.

Test	Characteristics	Case study tactic	The research phase when tactic happens
Construct validity	It focuses on the operational measure for concepts studied that represents what is being investigated according to the research questions.	Use multiple sources of evidence

Establish chain of evidence

Have case study report | Data collection

Data collection

Composition |
| Internal validity | It is term used to find out if the findings reflect or represent the reality. | Do pattern-matching

Do explanation-building | Data analysis

Data analysis |
| External validity | It is associated with repeatability of the case study and generalising the findings. | Replication logic in multiple case studies | Research design |
| Reliability | It is concerned with the ability of research method leading to the same results over repeated period. | Use case study protocol

Develop case study database | Data collection

Data collection |

Table 9: Quality of data. Adapted from Yin (1984)

Since this research follows an interpretive tradition, it was necessary to include (i) a solid evidence (Walsham, 1995b), (ii) consider multiple views and be aware of potential biases (Williams, 1964), (iii) aim for theoretical saturation (Strauss and Corbin, 1997) and (iv) generalisation of findings.

The conclusions reached from this research are traced back to the data recorded and transcribed to minimise any inaccuracies. Congruent with other interpretive case studies, I used a protocol that consisted of the research topic, questions and interview procedures that guided the data collection process. The responses of interviewees are truly reflected upon and are communicated in their voice. Over time, I improved my interview method by avoiding leading questions, and as Seale et al. (2004) said it is important to *ask* rather than *assume,* he continues:

> *"[participants] can tell us in their terms (rather than those imposed rigidly and a priori by ourselves) and in a depth which addresses the rich context that is the substance of the meanings"* (ibid, p. 258)

Yin (2013, p.45) states, *"the power of generalisability comes from the concept of replication, rather than the concept of sampling"*. However, focusing narrowly on generalising to theory can impact on the uniqueness and value of the case. Although, the case study research is

criticised for providing little basis for generalisation (Yin, 2011; Lee, 1989), I argue that it is possible to generalise from a single case (Gummesson, 2003) if the case is unique or critical to study, or if research is needed in a particular industry segments (Yin, 2013; Siggelkow, 2007).

3.7 Ethics

Ethics need to be taken into account when conducting research and there is a rich literature in the social science field, rather little has been written on this topic in the IS literature (Mingers and Walsham, 2010; Smith and Hasnas, 1999; Hirschheim and Klein 1994). In this case, the researcher had to deal with confidential information, which had to be handled with care. The main ethical factors include: i) informed consent; ii) confidentiality and iii) handling of sensitive results. I focused on these factors and mainly followed the guidelines and principles of Guillemin and Gillam (2004) that are worth considering.

The first principle includes the procedural ethics, which is associated with the researcher being aware of the ethics of the research activity. I referred the University's Statement and Guidelines on Ethical Practice (the Research Code of Practice) and was aware of the ethical guidelines taught during the training and development courses available for the PhD researchers.

The company agreed to participate in this study, was informed about the research and the researcher had access to employees who wished to participate in the study. Participants were advised about this study and were informed that the interviews will be recorded before asking for their consent, mentioned in Appendix A, Figure A2. This has been done verbally, as a formal consent was signed between the researcher, the supervisor and the company, which stated that the information obtained from the company need to be handled with confidentiality.

The second principle by Guillemin and Gillam (2004) refers to *"the ethics in practice",* which focuses on the practical issues arising from the study. The participation of individuals was entirely voluntary, and they could withdraw at any time of the project. To protect the anonymity of the participant, the researcher assigned a code number for each interviewee when the interview process was completed. Data was stored according to the specific ethical regulations, under a passcode.

The final section provides a summary of the research methodology chapter.

3.8 Summary of methods

This chapter focused on the methodological discussions related to this thesis. It started with the explanation of the philosophical stance, the epistemological and ontological concerns, which influence the understanding of the chosen phenomena under study. The discussion continued towards the analysis of the qualitative and quantitative research paradigms, and the reasoning behind the suitability of qualitative research for this study.

It further explains why an interpretive perspective is chosen for this study and its grounding in the IS research. The researcher adopted an exploratory case study research and the process is based on Eisenhardt's (1989) eight-step model for theory building. The data collection process is described in detail; I stated the choice of the sample and specified the interview length, number of interviewees and their demographics. The data analysis process is based on the principles of the grounded theory in terms of its *open, axial and selective* coding (Strauss and Corbin, 1990). Towards the end of the chapter, I focused on the issues associated with reflexivity and ethics that are often underappreciated the IS research, but relevant in this study.

The following chapter reviews the empirical setting used in this qualitative case study research.

4 FINDINGS: THE CASE OF REDCO

4.1 Introduction

This chapter presents the fieldwork component of this thesis through the illustration of a case study in Redco; it focuses on the analysis of work practices of nomadic employees.

The first part of this chapter starts with Section 4.2, which provides a background to Redco and it explains the 'Digital nomadic' strategy in Section 4.3 that was applied in the organisation. As part of the 'Digital nomadic' strategy, there was a workplace redesign that required implementation of new digital media as well as changes in governance and policies.

The second part of this chapter focuses on the data collected during the fieldwork, mainly through interviews and supported by observations. Section 4.4 begins with the overview of a typical day of an employee in Redco. This story provides a brief snapshot of his daily activities and describes how the digital media are part of his everyday work life. Section 4.5 discusses the work accomplished in various digital spaces, focusing on explaining what these spaces are and how employees 'inhabit' them. Section 4.6 illustrates examples of how employees manage the overwhelming interactions and connectivity associated with the implementation of various digital media. Section 4.6 discusses the importance of a physical space. It continues with Section 4.7 that shows the straddling of digital and physical spaces. Finally, Section 4.8 summarises this chapter and discusses the main themes that emerged from the fieldwork.

4.2 Overview of Redco

Redco is a multinational organisation founded in the 1980s in California, with a turnover of more than $49 billion in 2015. The company is a worldwide leader in the IT sector. It designs and sells a variety of products and delivers integrated solutions to connect networks around the world. The products are grouped into various categories such as routing, collaboration, data centre, security and wireless among others. In addition to this variety of products, it provides a range of services to customers of all sizes, including technical support in terms of cloud, video, security and mobility.

The growth of the company is based on acquisition strategies, and since 1993 there were more

than 170 acquisitions to date, which are based predominantly in the US. These acquisitions were aimed to design technologies related to networking, switching and Voice-over- Internet Protocol (VoIP) and also to bring new talent and skills to Redco.

Redco has a global presence and manages businesses in three geographical segments, namely: i) Europe, Africa and the Middle East, ii) Asia Pacific, China and Japan, and ii) the Americas. In these geographies, the company has more than 70,000 employees located in 380 offices. Being geographically dispersed means that employees often collaborate with their co-workers across these geographical regions.

The next section clarifies Redco's intentions behind the implementation of the 'Digital nomadic' strategy.

4.3 Digital nomadic strategy

In 2009 the CEO of Redco presented a strategic plan on how the company could achieve its ambitious growth and significantly change how it did business. The aim was to reduce costs associated with travelling, promote flexible working and to increase productivity by 10 per cent per year to collaborate more effectively.

Because of these drivers, Redco implemented the 'Digital nomadic' strategy, and the components of this strategy are depicted in Figure 5 below. This strategy was oriented towards workspace design and changes from the traditional workplace to hot-desking. The major change that occurred regarding the digital media was the implementation of WebEX social that aimed to connect employees within the organisational network. Also, new policies were created to support the new ways of working.
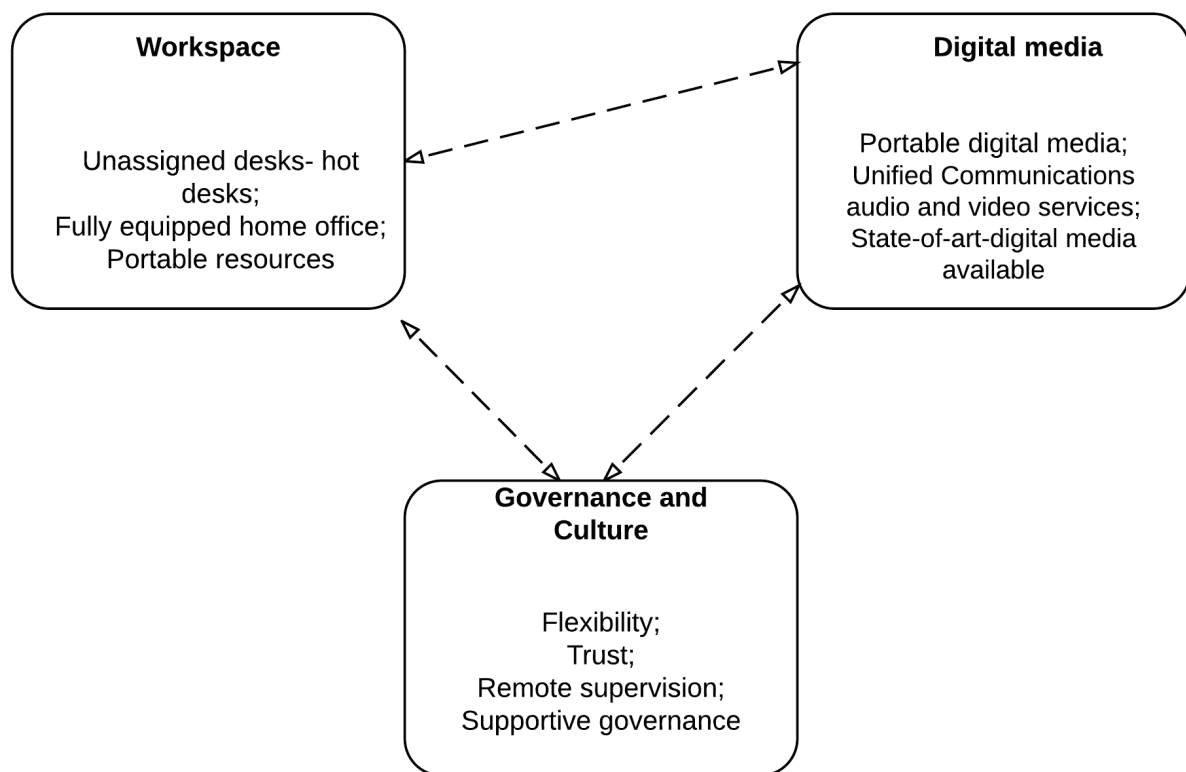
Figure 5: Redco's Digital nomadic strategy

The following sections elaborate on each of the aspects mentioned in Figure 5 and focus on the changes associated with new ways of working. Section 4.1.2 describes the practices of employees and their current work patterns.

4.3.1 The work style of employees in Redco

Redco's employees were often on the move to visit clients but worked the standard nine-to-five workday. In 2009, Redco published a White paper stating the company was changing the way it worked as part of the 'Digital nomadic' strategy.

Employees in Redco became flexible, and 75 per cent of the employees demonstrated a mobile work style. They had more autonomy in terms of working at various times, and 50 per cent of the employees had to adjust to time-zone differences in order to collaborate with their distant colleagues (Redco, Whitepaper, 2014). The White paper published by Redco in 2013 recognized these various work styles of employees, which are as follows:

- *Highly mobile – employees who travel extensively; for example, sales people visiting customers' location.*
- *Campus mobile – employees who are nomadic internally and interact across functions; for example, leadership roles.*
- *Remote/distant collaborators – employees who work from home and interact with geographically distant colleagues.*
- *Neighbourhood collaborators – employees who are nomadic within the group; for example, a project manager managing a team.*
- *Workstation anchored – employees who are non-mobile and perform individual work; for example, the outsourced offices of Redco.*

As of 2014, the statistics below show the proportion of mobile workers and telecommuters in Redco.

- *89 per cent telecommute at least once a week,*
- *47 per cent are mobile workers,*
- *per cent are fully remote workers, and*
- *75 per cent demonstrate mobile work style.*

Besides being mobile, Redco's employees have diverse patterns of work – engineering, sales, call centres, administrative staff and management. Also, since Redco's growth is mainly through mergers and acquisitions, employees from these acquired companies had different expectations on how and where to conduct their work. The work environment is not only diverse culturally, but also generationally. The newer generation, digital natives, had various expectations and desired more flexibility on where, when and how work was accomplished. In contrast, digital migrants, the older generation, were adjusting to the digital transformation. However, both generations in Redco are technologically savvy and have the latest technologies available.

The flexible work practice led to an increase in the retention of employees, and also substantial economic benefits associated with the cost of turnover. It also attracted new employees as many said they preferred flexibility and remote access to a job with higher salary. Interestingly, nearly half of the employees in Redco worked up to three more hours a day (Redco, Whitepaper, 2013).

The next section focuses on the design changes occurring in the offices to accommodate the variety of work styles as part of the 'Digital nomadic' strategy.

4.3.2 The office environment in Redco

Before the 'Digital nomadic' strategy was implemented in Redco in London, employees used to work in their own cubicles and managers worked in assigned offices. The cubicles and desks were empty most of the time and no longer needed, while the meeting rooms were often occupied. With the changes in employees' work patterns, this traditional work environment no longer supported employees' practices, and thus the changes were pushed forward.

The offices in London were redesigned in 2012 and became more adjustable, reconfigurable and portable by implementing a hot-desking strategy. Figure 6 shows the new university-inspired theme workplace design in Redco. The offices included quads, plazas and private space and were built in a 4:1 ratio of collaborative to individual space.

Quads were common areas designed for planned and spontaneous office meetings, plazas provided space where employees could engage informally and quiet spaces were built for working alone to minimise distraction. An example of a large conference room, which can be converted into several smaller units via movable walls can be seen in Appendix B, picture B5.
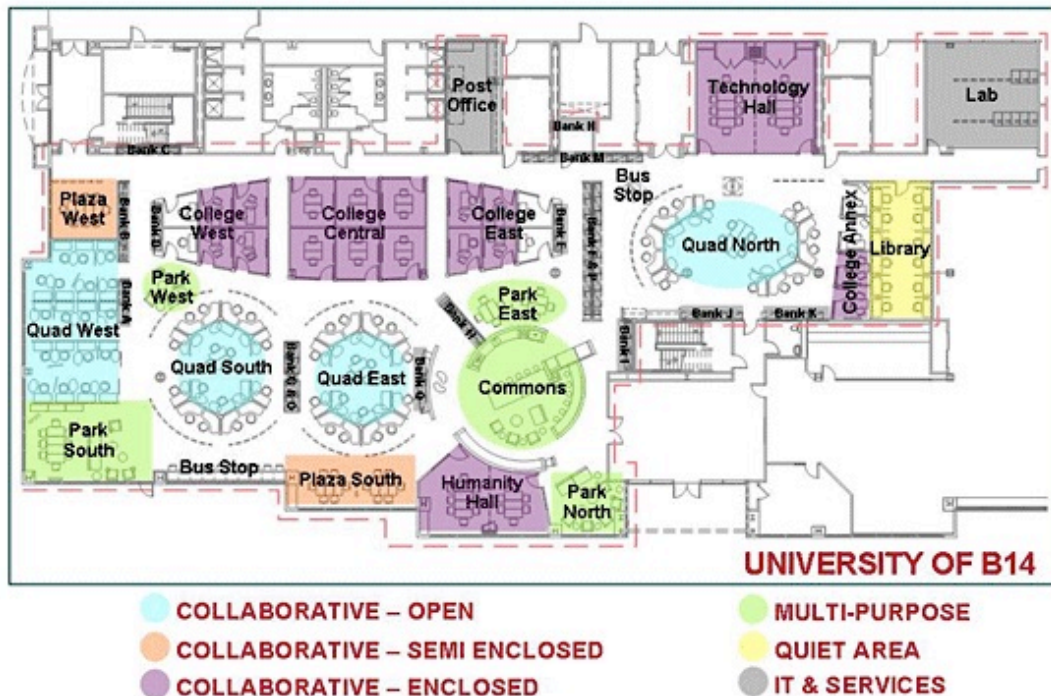

Figure 6: Workplace design. Adapted from: [Redco] Annual Case Study 2012.

This redesign of the offices contributed to a decrease in overheads and in space-requirement savings. More importantly, offices were used as a space to collaborate and support a more dynamic approach to work. A central principle to the design of offices in London was a wireless environment and digital media that supported mobility and flexibility of work.

4.3.3 Digital tools supporting work at Redco

The 'Digital nomadic' strategy was supported with the implementation of an enterprise social media platform. Initially the adoption rate was very low because of recurring technical issues. In 2010, Redco initiated its transition into the digitised strategy by introducing a change management program in conjunction with training. The aim was to connect over 70,000 employees through WebEX social, a tool introduced to employees as "Facebook-like" and an "email destroyer."

WebEX social was designed to integrate communication, collaboration, search and personal productivity among other features, and would change the way employees collaborate and communicate. Previously, departments were not connected, and one of the requirements was to create an effective and engaging collaboration across departments. This tool supported connections between employees, enabled access to information, and promoted faster decision-making. It combined various communications solutions by having synchronous (e.g., email, video conference and text) and asynchronous (e.g., wikis, blogs and forums) tools in one place. A screenshot of WebEX social is shown in Appendix B, Figure B1.

Apart from WebEX social, there were other digital media present in Redco listed in Table 10 mentioned below.

Digital media in Redco	Characteristics of digital media
WebEX meeting	This digital medium is reliable and relatively inexpensive. It offers a good-quality visual collaboration and adds richness to meetings.
Immersive Telepresence	Telepresence is the most expensive medium with many benefits. It has a high reliability and offers immersive visual collaboration. It is used to improve strategic communication and allows for replacement of in-person meetings.
WebEX social	It is built based on social media features. It helps individuals to create and broaden their network. They can connect with colleagues based on their skills, knowledge and experience. Long-term benefits are relationship building, mutual trust and better access to knowledge and expertise.
Wikis	It is used to improve collaboration and publish pages of web content, which others can edit and contribute to.
Instant messenger	It offers presence. Individuals can check the availability of their colleagues. They can use chat, quickly contact others and pass information. This can be done without the time, effort, and formality of a telephone call or an e-mail.

Table 10: Digital media in Redco

The more sophisticated collaborative digital media such as Telepresence-enabled employees to have one-to-one experiences without the necessity of travelling. In 2014 when the research was undertaken, Redco's offices were equipped with circa 600 Telepresence units that were available to employees. They were popular and were used nearly 60 per cent of the time. WebEX meeting is another digital media that enabled 70,000 users to attend an astounding 33,000 meetings a day. Interestingly, only one-third of those who used WebEX meeting turned the video on because of the fear of privacy invasion.

Table 11 lists the various digital media providing support to employees in three columns.

Nomadic work in the office and beyond	Nomadic work beyond the office	Nomadic work across time zones and space
Wireless access points; Softphones (Jabber); Email	VPN router in employees' homes; VPN access and security solutions; Softphone (Jabber); Tablet or videophone; Other smartphones that enable working beyond Wi-Fi; Virtual desktop integration; Virtual experience integration; Email	Unified Communications audio and video services; Telepresence units (desktop, small groups, room-based systems); IP Television solutions; WebEX Social; Broadcasting video live; Email

Table 11: Digital media for flexible work practices

As a result of digital media implementation, employees saved up to 15 minutes daily, time previously wasted on inefficient tasks associated with searching for information in various sources. In addition, travel costs were significantly reduced.

The next section focuses on the changes resulting from the introduction of the 'Digital nomadic' strategy that were occurring in Redco in terms of creating flexible policies and related cultural changes.

4.3.4 Culture and norms at Redco

As part of the 'Digital nomadic' strategy, Redco developed a flexible workplace policy to support the new ways of working based on collaboration, flexibility and work-life balance. The policy is shown in Figure 7, stating the advantages and disadvantages associated with being a nomadic worker and informing employees how to operate in such an environment. Although the policy conveyed that mobile employees had autonomy and flexibility in their practice, it also ensured that employees maintained or increased their productivity when they were absent from the office.

- **Discuss the remote work option with your manager.** Approach your manager before requesting a formal FWP arrangement and discuss work options that include flexible hours and days during the work week. Determine if your organization has remote-worker agreements that need to be completed and approved.

- **Emphasize your availability.** Let your manager know you are ready, and come prepared with contingency solutions in emergency situations.

- **Create formal performance assessments.** Set clear objectives with your manager. Check in regularly with your manager to ensure business needs are being met.

- **Exceed expectations.** Your FWP arrangement sets clear expectations. Do your best to exceed them.

- **Maintain or increase your productivity.** This shows that you can be highly effective in a FWP environment.

- **Keep the momentum going.** Check your email multiple times during the business day and try not to leave projects untouched for more than three consecutive days.

- **Protect your time.** Only read emails or participate in conference calls that are pertinent to your deliverables.

- **Set a work schedule.** Be sure to communicate this schedule to your manager and key stakeholders. Although you now have flexibility, try to keep a consistent routine. This will help raise your effectiveness.

- **Adapt as business needs arise.** This may include coming into the office when you are not scheduled to do so, traveling, or occasionally working late to complete tasks.

- **Own your schedule.** As needed, schedule calls and meetings when you will be in the office. Likewise, consider your personal strengths when deciding which work hours are best for you. If mornings are most efficient, try to schedule work early.

Figure 7: Working policy in Redco

The culture in Redco was supportive allowing employees to adopt practices, processes and behaviours that allowed for new ways of working. Employees believed in the cultural values of openness, diversity and helping each other; this was supported by interviewees who said the culture was *"open to innovation,"* *"goal-oriented and flexible,"* and individuals had a *"feeling of engagement"* (Interviewee A06; A13; A22). Many interviewees highlighted *"the family aspect"* in the company and the *"willingness to help"* (Interviewee A27; A14).

Redco operates on a collaborative leadership model, which diverts from the standard command-and-control mechanism to a more cross-functional collaboration. Employees were motivated without being strongly monitored or supervised, and leaders are seen more as ambassadors or champions. As an instance, 52 per cent of employees worked in a different location than their subordinates (Redco, White paper, 2014).

As a result of the cultural change supported with governance and policies, there was an increase of 80 per cent in employee satisfaction, and according to the Fortune Magazine, Redco is among the 10 best companies for employees to work for 17 consecutive years.

Having presented the case of the company, the following sections focus on the analysis of the interviews conducted at Redco. The discussions interpret the stories of individuals who describe how they use the digital media and their workspaces, when conducting their "Digital nomadic" work practice. It starts with a story of an employee in Section 4.2.

4.4 Snapshot of a typical day in Redco

Through this case, I now provide the example of a typical workday of an IT Manager in Redco. This case is particularly noteworthy because it combines the different aspects of the employee experience in Redco, which is notable through the other interviews. Employees started their everyday routine in a somewhat similar manner. Because of the autonomy in their work, their descriptions diverted slightly depending on how they organised work with non-work activities.

The quotes below illustrate the participation in a range of meetings throughout the day with the use of digital media such as mobile phone, WebEX social and WebEX meetings, from waking up to going to bed, and the role these media played in various activities. The results indicate that the interviewee would access his work on the aforementioned digital media and that he was constantly involved in his work. The choice of the digital media to use depended on the task at hand, convenience and the location of the other collaborator. He explained that email was mainly used when others could not be reached via WebEX meetings due to differences in time zones.

The popularity of WebEX meetings increased with its functionality among employees in Redco; it provided participation in meetings, the ability to share documents and screens, and video together with other features in real-time.

The quotes also show that the IT Manager does not operate in complete isolation, but collaborates with others throughout the day. He often found himself multitasking to be able to keep up with work activities. Having iPhone, WebEX social and email means that he can conduct work activities quickly from home or anywhere, which then stretched his workday into his personal time. He responded:

"... in the morning at 6 am, I will have a quick look at my iPhone, when I eat my cornflakes, what emails are coming overnight from other regions. Because I was working from home today, I turn my laptop on straightaway. The work is dominated by emails. When I am [home], I am definitely using WebEX for meetings with video, definitely using voice and the other functionalities. I have the ability to share my screen, you can run presentations, and you have working sessions...

What I do sometimes, during some of the more boring meetings, you have to multi-task, you have to be checking your emails, you have to be looking at the news ... After a while, you become accustomed to listening to things and doing other things. In a case if you are in a meeting to only listen, to get information, then you tend to do stuff to phase out at the point of times. Later on this afternoon, I am in more video meetings.

I have got actually two hours spare today when I can get some work done, respond to emails and write presentation ... and finish tonight ... quarter to five to pick up my son from school, but I have got meetings afterwards as well." (Interviewee A10, IT Manager for Europe, Africa, Russia, Middle East, Redco UK)

The following section reviews the different digital spaces available in Redco.

4.5 Working in digital spaces

This section expands the argument on creating and organising work in digital spaces. It aims to define what these different digital spaces are, and how employees interact and work in these spaces to conduct their practice.

All the interviewed employees in Redco had a good command of new digital media and used them daily for their work activities. An interviewee who works as a Vice President for IT lists the range of digital media, which in her words are all important for Redco's employees. She explains which digital media were adopted first and notes that the aim was to create an organisational network by connecting all employees. This was accomplished when enterprise social media was implemented and she explains:

"It really needed to be those things that were relevant to work, and at the time we thought that was blogs, wikis, discussion forums and, of course, instant messenger has

become the killer app. Then we couldn't stop there, but we would have introduced some interesting new tools to the organisation and really we would have not fulfilled our vision, which was the integrated workforce experience until we had the elements of all these different modalities and communication and collaboration and now even enterprise social media. We are a network" (Interviewee A08, Senior Vice President, IT Communication and Collaboration, Redco UK)

To elaborate further on the enterprise social media platform adoption in Redco, an interviewee who specialises in the development of communication and collaboration tools discussed the idea of 'portlets', which represent the different digital spaces. These digital spaces or 'portlets' can be found either within WebEX social, which combines many of these 'portlets' in one platform, or they can be a combination of different digital media (e.g., instant messenger, email, WebEX meetings). He discussed that these different spaces allowed him to stay updated on [Redco's] news, he could stay in touch with colleagues and interact with his team, which he calls the 'trusted group of contacts'. He said:

".... what you have is the concept of portlets, one stream is one portlet, you have got [Redco's] news, regional or departmental news, headlines, ... and also... you have got the specific trusted group of contacts based on the work you are doing, based on the project involved in ... by having that trusted group of contacts, whatever they are doing is going to be relevant to you ..." (Interviewee A14, Communication and Collaboration IT Support, Redco UK)

Another employee discussed how he chose between these different digital media and for him it depended on the goal of the projects and people with whom he collaborated. He provided an example of how he established a contact with someone with whom he has not spoken before:

"The choice of the media depends on the context, and the goal, what are we trying to get out of the meeting, and people as well. If it is someone I never spoke to before, I don't start with a Telepresence, I start with email, then I can pursue with WebEX [meetings], and also when it comes to having many people in a meeting it's WebEX [meetings]. WebEX is easy to set up, everyone knows how it works and it always works. Telepresence is much newer..." (Interviewee A06, IT Business Relationship Manager, Redco UK)

The different digital spaces that exist in Redco are targeted towards having one-to-one interaction, collaborating within teams and being connected within Redco's organisational network.

4.5.1 Digital spaces as one-to-one interaction

Many of the interviewees noted the advantages of using Telepresence for one-to-one interactions and because of its features it created a sense of physical proximity. For instance, an IT manager in the UK whose team is dispersed in Europe uses Telepresence for *"annual performance reviews of his team members"* (Interviewee A10, IT Manager for Europe, Africa, Russia, Middle East Redco UK); similarly, IT manager in France prefers Telepresence for *"strategic planning"* or when *"rich interactions"* are needed (Interviewee A09, IT Manager, Redco France). Additionally, he continued to explain the importance of the visual aspect in Telepresence and the ability of seeing faces of other collaborators on the screen. He explains:

> *Telepresence is especially used if we need to strategically plan our meetings and 5 of us can meet in our Telepresence room and the others can be video-bridged and you can see every face on the screen. You can use one person unit, or people get together in a room then you can see who is talking as his face would appear on top of the screen* (Interviewee A09, IT Manager Redco France)

A senior director in Redco describes Telepresence as having *"the best experience,"* and it enables replication of in-person experience. She continues:

> *".. when I have one-to-one and … personal discussions based on work are needed, and I personally always use Telepresence. It's high definition, there is no latency, and after five minutes you forget you are using Telepresence. It almost feels like we are talking in person"* (Interviewee A05, Senior Director, Redco UK)

Another interviewee comments on using Telepresence for one-to-one discussions that are important, and these interactions have to be pre-planned in advance as stated by an HR representative. She explained she used WebEX meetings for everyday interactions as a replacement for Telepresence, and one of the advantages of using WebEX over Telepresence is that it was always available.

She elaborated on the use of digital spaces for individual interactions:

"I'm having one-to-one meeting with my colleague in Frankfurt, I would always try to make it a Telepresence if it's something important we really wanted to talk about for an hour or so. If it is something where we are doing a spontaneous meeting discussing the usual everyday tasks, he calls me and he says let's look at this, then we're using WebEX meetings" (Interviewee A04, HR Representative, Redco Germany)

Having reviewed the digital spaces for one-to-one interaction, I will now focus on discussing the digital spaces used for collaborating with team members.

4.5.2 Digital spaces as team spaces

During the interviews, participants mentioned that there was a dedicated area on WebEX social for team collaboration to fit the different aspects of collaborative tasks (e.g., screen sharing, posting documents, commenting, editing). Redco created this space as an alternative to meeting face-to-face with the intention of saving on travelling costs.

WebEx social was mentioned in terms of the changed behaviours and compared to working in the traditional form of using emails versus working in WebEX social. An IT manager discussed his behavioural changes in terms of how he interacts with his team, and he clarifies:

"So in terms of my change in behaviours, I don't email documents now, that's just not something that I do. If I have a file or something to share, I would automatically go and post it onto the platform" (Interviewee A09, IT Manager, Redco France)

Also, changes in terms of communication within the team were evident in one of the departments when the Communication manager changed the way she interacted with her team. She continues to explain:

"... I used to communicate to my team by e-mail with a newsletter .... Today I still − for the moment − still send e-mails, but there are basically two lines in that email ... with one link to the WebEX social post" (Interviewee A37, Communications Manager, Redco UK)

Importantly, in these two instances it seemed that the use of email was nearly replaced with

WebEX social regarding how teams work together. This has been also confirmed with a collaboration architect who says that he used WebEx social when he is collaborating with his team, and he can edit documents, see who has been working on it, which has not been possible before. He further comments on the advantages of the platform and points out certain features of the platform that are especially useful:

"The coordination has been great with WebEX Social. So when I'm working on a document, I see who else is working on it, who has reviewed it, who has been reading it, where has it been downloaded on the platform and so …" (Interviewee A03, Collaboration Solutions and Functional Architect, Redco UK)

One of the interviewees explained how he stays connected and communicates with his colleagues that are dispersed around the world. WebEX social was a primary communication method for his team and a business analyst comments on how his team operates:

"We are everywhere. Our primary operations team is based in London, I'm the only person on the East Coast, so I'm by myself. So you know I desperately need something like WebEx social to keep me connected to my team and then the majority of our team are based in San Jose. And then beyond that, my co-release manager being in Sydney, Australia, and then a number of our quality assurance team that are based in India and we even had developers based in China. And then Sophia, Bulgaria is another location for the [Redco] development team.. So we had literally the capability to run our release in a 24 hour 7 day a week platform" (Interviewee A36, Business Analyst, Redco USA)

To support the formal collaboration, the choice of digital media depended on whether the response needed to be immediate, for which different sets of digital media were used than if the conversation did not require an instant response. An IT analyst clarified the preferred communication method within his team to support formal collaboration. He explains:

"Formal team collaboration happens through digital spaces when I post something. For example, in my team, there are five of us in the UK and 11 people are abroad, and to be able to interact with each other we use all the communication methods. We use emails, instant messaging, WebEX social, phone calls, if you need a quick response, you know people are always available on these tool …then for meetings we have kinds of video conferencing technologies such as WebEX [meetings], we use it for our weekly team

meetings, mainly to catch up" (Interviewee A11, IT Analyst, Redco UK)

An employee who works as a communication and collaboration IT support and continuously works on improving the WebEX social, explains that besides sharing the screen, employees need a space for accessing documents that are stored in a repository and can be shared, reviewed and amended. He continues to discuss how easy it is to communicate with others within a team:

> *"... it is easy to communicate and collaborate with your team ... sharing video, being able to talk, being able to exchange and share documents"* (Interviewee A14, Communication and Collaboration IT Support, Redco UK)

To gain the right level of interactivity, an IT Analyst from India who works with her colleagues in the UK discussed the importance of sharing a screen with her co-workers. To share the screen she uses WebEX meetings:

> *"... many times you need to share your screen because you want to show something. For example, if you need to prepare a presentation for next week, someone is going to prepare a presentation and you need to show it to other people"* (Interviewee A21, IT Analyst, Redco India)

The next section expands on the argument of working in community spaces that are targeted to connected employees within a wider organisational setting.

4.5.3 Digital spaces as community spaces

This section focuses on the spaces that emerged with the implementation of WebEX social. The collaboration within the organisational network was supported with visibility and allowing employees to see the skills and expertise of their colleagues. The profile information was located on WebEX social, which was visible within the entire Redco's network. For this reason, employees could find experts who were needed during more specific collaborations. The interviewee discusses this further:

> *"You can set up your profile, set up your 'mywork space', your 'myview". So it is the visibility and almost replicating the human contact that matters. If I want to talk to an*

analyst who has expertise in world conferencing, I can see if he is available, I can click to chat with him. If I can't find what I need, I can go and visit his profile and see what he has posted ... we'd have identified Nolan as an expert ... you can follow him and connect to Twitter as well" (Interviewee A28, IT manager in the Unified communication team, Redco UK)

IT analyst comments on the possibility of WebEX social connecting people together in one platform and it helps to create a community. The primary aim of the community space is not to build relations rather it is to support collaboration.

"WebEX social has the capability of bringing together people that are not necessarily your day-to-day friends, but it gives you a venue through which you can share information that may be of interest in one person in your community.." (Interviewee A11, IT Analyst, Redco UK)

Another interviewee commented on the community creation in Webex social, and he explained that in the past he would meet his colleagues face-to-face and collaborate with them within the 'local eco-system', or in other words, in an office. Whereas now, he says that WebEX social enabled him to reach a wider audience within the organisational network. He uses this space to reach dispersed colleagues outside of his team and beyond his office in Germany and explained:

"If you have a good idea, normally what you would have done in the past, you would walk around in different offices and tell people about your great idea and asking them to support you. You would socialise in your local ecosystem, by collaborating with your colleagues or some other co-workers in the same office. And therefore, you do need an open platform like WebEX social, where you can easily connect with others, share information; but also receive some feedback, which would then lead to the next discussion where things are being developed within that sort of context, where you have many people working on the same object, providing feedback and driving your idea to the next level" (Interviewee A01, IT Leader EMEA, Redco Germany)

The adoption of WebEX social created and strengthened organisation wide communities, and supported connections between employees who were not previously connected. An IT Analyst

said that WebEX social became a *"virtual water cooler,"* (Interviewee A21, IT Analyst, Redco India) meaning that it was a space where employees outside of the teams could 'meet' in digital spaces and exchange their knowledge. Project manager for IT continues to explain on collaborating within Redco's organisational environment.

> *"...I'm actually working inside a very global environment where if I create a post today and I share it with the public, which means anyone on WebEX social can see it, then I'm opening up my post for comments and collaboration that I didn't easily have before"* (Interviewee A02, Project Manager for IT, Redco UK)

The reasoning behind an enterprise wide collaboration was to advantage from the various skills and resources of employees within the company, and to break down the silos that existed within Redco.

> *"The actual change that we are making is to become a what we call 'swarming'. So everyone at [Redco] has a role, but everybody has expertise and passions and interests outside of that and that is really where you capture the innovation essence of any solution that you put within your company. So unless you give your employees the ability to focus on those outside of role activities, you are not going to become innovative as a company"* (Interviewee A22, Regional lead, Redco Slovakia)

Many interviewees discussed the cultural differences between teams that were evident when the platform was implemented throughout the organisation. For instance, a collaboration architect said that when these spaces were created to connect employees within Redco's organisational network, it led to a change of dynamics in these spaces. Some spaces were more collaborative than other spaces. She said:

> *"Some communities were communicating from the beginning, used more comment fields and the conversation was dynamic. For example, someone would ask a question and there would be an immediate reply from colleagues in the UK, US, Dubai or Germany. Others would use the community as a Twitter feed and there was less interactions ... so ... there were big differences on how they communicated in these groups"* (Interviewee A03, Collaboration Solutions and Functional Architect, Redco UK)

Others commented that the difficulty in merging the different cultures was not a result of the

technologies used, but it was about the 'way of working together' in a large enterprise, and it was difficult to achieve complete integration.

"... giving them the opportunity to have these joined up conversations as a virtual team, it's clashing the two cultures together and they are now finding new ways to work together. So it's not even just the technology, they have to work together ... It's driving them into a different culture of working as a single team" (Interviewee A37, Communication Manager, Redco UK)

The next section focuses on the instances when employees mentioned how they manage connectivity and interactions because of the increasing interactions in Redco.

4.6 Interactions and connectivity

4.6.1 Receiving high-frequency information streams

This section explains the instances when the communication levels increased in Redco and employees felt they received information often a result of intense and dynamic interactions.

Many interviewees explained that WebEX social enabled them to reach wider audience and created immense possibilities for interacting and communicating across boundaries, but also it created pressure on employees to work outside of their standard work time or even beyond the specified work hours.

"So with WebEX social, you know there is some of us who are crazy enough to work strange hours. You would wake up in the morning and find a post updated at midnight your time that someone from India was working on, and you could either continue working until midnight or think, oh, I will get it done or you can wait till the morning. I guess for me it depends on the tasks, if it is something urgent I will work at strange hours you know two, tree in the morning.." (Interviewee A34, Business Relation Manager for IT, Redco UK)

An IT Analyst also noted that even when she finished work, a number of American colleagues would contact her via email. She received numerous notifications on her phone, which she believed was excessive amount of emails in a short period of time. To cope with the

interactions, the IT Analyst assessed the notifications and postponed her reply to the less urgent ones, thus allowing herself to direct her attention to the important emails. She said:

> *"I finished at six yesterday, left, drove home, went to the gym, came home and in two hours I had 15 emails in that space of time and that's just from people coming online from America. And I just have to check it and I don't necessary reply straightaway, I just like to know what I need to do, what I need to prepare myself to unless it is urgent. Technically you don't stop working"* (Interviewee A13, IT Analyst, Redco UK)

Others also complained about the high frequency of emails, as in the case of a Redco Vice President who managed her emails with the help of a personal assistant. However, she appreciated that all the notifications were in one place because previously they were scattered in various spaces. She used email as a way to deal with this increasing communication and avoid possible inefficiencies. She explains:

> *"On a Monday morning I have 20 different notifications in my email about all the things I have to approve; now I have it in one location. So like travel, purchase orders, HR system and those things. So all of a sudden I have now taken a lot of frustration potentially, you know, inefficiency out of the system by having it all in one location"* (Interviewee A08, Senior vice president communication and collaboration, Redco UK)

To continue, an employee from Redco in France said that he receives information at all times which is related to the visibility that one has in an organisational setting. He explains that employees are part of the Redco's network through instant messenger and sometimes it can feel too intrusive because employees can be contacted at all time. He especially talks about instant messenger:

> *"On the other hand, when you are connected to the network, you have presence information that you are on or off the network. And I sometimes feel like, oh yes, this is the big boss is always watching you, you know. They are watching me what I am doing. Since they don't ask me to come to the office, they need to know if I am on and if I can be contacted via Instant Messaging, they can call me because ... I am green, I am available; yellow, I am on the phone; red, not available. You see, again it's always give and take."* (Interviewee A09, IT Manager, Redco France)

The high frequency of communication streams grew with the change of behaviours around the use of WebEX meetings, instant messenger and other synchronous tools. Whereas before if she needed to ask a question she would pick up a phone, now she uses these aforementioned media to set up a meeting in order to receive an answer. She said that it creates a 'meeting culture' and continues:

> *"Redco has a meeting type of culture, if you have got a question, someone says let's meeting via WebEX meetings. No one ever uses phone calls, which is weird. You would use your phone to connect to WebEX, but you would not use your phone just to ring someone. I think that might be a generation thing now. With instant messenger, it is so engrained now that people don't ever use phones, unless it is a scheduled call, and you never contact people via phone"* (Interviewee A24, Analyst, Redco Dubai)

The next section focuses on the instances from interviewees who said that they receive too much information.

4.6.2 Receiving high-intensity information streams

While the previous section elaborated on the instance when employees felt that they were receiving information too often, this section focuses on interviewees who said that they received excessive information.

The communities that emerged within WebEX social created too many information streams, and the interviewees discussed these instances. Some employees noted that they participated in *"about 25 communities ... some are more on a routine basis and some are, you know, less frequent."* (Interviewee A05, Senior Director, IT, Redco UK)

In particular, the lack of in-person interactions and the collaborative nature of the company leads to the creation of communities that are not directly related around work-tasks. A collaboration specialist discusses the different informal communities that are present in Redco; she explains:

> *"And I think people's personal lives are also coming much more internally as well. So we are having a lot of the social communities, which are not work related. ... And now, you know, there's wine clubs, there's running clubs, we've even got singles' clubs in a London*

community for all the single people working in London" (Interviewee A03, Collaboration Solutions and Functional Architect, Redco UK)

Another interviewee comments that she felt aggravated by these communities because she was not interested in collaborating around non-work topics. She also commented that participating in these non-work communities created too many information streams, and at one point she 'felt overwhelmed' and it resulted in a lack of time for her work tasks. She also said it was unsustainable to keep track of what was going on. Hence, she filtered information that was relevant to her work and interesting to her and avoided irrelevant informal conversations.

"I don't really care what my team had for breakfast. It is just a waste of time. I want to see what they are working on ... otherwise, you know, it is too much. I participate in few communities and I just focus on information that is relevant for my job" (Interviewee A04, HR Representative, Redco Germany)

An IT manager had a similar view and said that to sustain a community, it is necessary to participate, and if you are a member of one or more communities, then it can have a disturbing effect on your work.

"What is right side of a community? That is when you start to share among the community ... and when you joined 10 or 15 communities, you need to dedicate a lot of time to this ... which is not sustainable" (Interviewee A09, IT Manager, Redco France)

4.6.3 Managing interactions and connectivity

This section explains how employees manage their interactions and connectivity in an environment of increasing frequency and intensity of communication.

A communication manager in Redco in the UK said that she could not cope with and manage the overwhelming interactions. In fact, she clearly said that the only feasible way of managing the communication streams was to turn her phone off, and she continues:

"Can you get offline ... so people don't disturb you? No, not really. At times, I have to switch [the phone] off completely, so people don't know where I am." (Interviewee A37, Communications Manager, Redco UK)

Also, a Business Analyst explained how he manages connectivity. He explains it became a habit for him to constantly check his phone even outside of his standard work time. The pressure of staying in touch and on top of things intensified his practices. As with other interviewees, he felt obliged to be connected.

"When I wake up, I check my emails on my phone and the last thing before I go to bed, I check my phone for any emails. It is a horrible habit!" (Interviewee A21, IT Analyst, Redco UK)

An IT Manager managed the flow of interactions by adopting new practices around technology use. He mentioned that the use of instant messenger and the online presence feature allowed him to update his status to reflect what he was doing. He set it to 'busy', 'available' or 'online'. The presence feature on instant messenger was linked with his email so that colleagues who are not using instant messenger can see his status. The IT manager explains:

"So we have a thing called presence on [instant messenger] and I can see what they are doing whether they are in a meeting, they are online, offline or whatever they are doing. My presence earlier was on [a] school run, because it was linked with my Microsoft Outlook, so whatever I put on Microsoft Outlook it will be linked to there ... you can see whatever I am doing" (Interviewee A15, IT Manager, Redco UK)

As with the case of interviewee A15, an IT Analyst uses digital media to control the interactions and connectivity without it being too overpowering. He explains that having various digital media (WebEX social, email and instant messenger) in the workplace does not distract him because he grew up with these tools. He continues:

"...email [is] constantly opened, outlook organises my life, it is easy to use. WebEX social and instant messenger are always open for collaborating, so these things are embedded in our team culture, people are trying to proactively use it that['s] how it works. It is pretty seamless, email is there when you need it, when you want to look for something as lot[s] of information still comes through emails as not everyone is using

WebEX social as a primary collaboration tool. Some document sharing and updates are still done by email. I don't really think about [using many tools simultaneously] it just really happens. We, our generation, it is quite easy, because we always have been connected. Mobile phone, TV, Facebook, and I don't really think about it anymore. [It's] the way we grew up." (Interviewee A27, IT Analyst, Redco UK)

A project manager for Redco IT said that being connected at all times is part of Redco's culture and in that case employees learn to manage it. She also said that she appreciates the flexibility and in that sense she might dedicate extra hours to her job. Also, she mentioned that having the digital media with her at all times is actually beneficial in a sense she can conduct her work anywhere. She continues to explain:

"the mantra at [Redco] is any place, any device, any time …so with the introduction of enterprise social media, you either have the good news that you are always connected or the bad news that you are always connected... And on the good side of that, you can take your smartphone when you go to work out at the spa or, you know, you can go to attend your son's football game and you can take your smartphone and do your e-mails from there... So I don't look so much anymore at work-life balance, otherwise, you know, you can never get balance, because you often times spend more time with your work colleges than you do with your own husband or family. So there will never be a balance there ….but I don't mind working some extra hours for that flexibility that I have in my job..."
(Interviewee A02, Relationship Manager for Redco IT, Redco UK)

An interviewee comments on his rhythm of work and private life and how he manages connectivity in order to keep his work and life in balance. According to him, managing the balance between work and life has to become routine, as work can be very overpowering and potentially disrupt private life. He explains:

"There is an expectation from the company to be flexible, and equally there is flexibility from [Redco] to allow you to keep your work-life balance. What I would say, it is important for you as an individual to understand where your personal limit is and to make sure that you discipline yourself to keep that work-life balance. It is something that comes with experience I think. It's very easy for each end every one of us [at Redco] to work all night long, all day long and keep on working, there is always something to do,

right?" (Interviewee A10, IT Manager, Redco, UK)

One of the employees felt that he needed to continually check his devices to manage a commitment to others by replying quickly to messages and constantly monitoring communication flow. He said during an informal interview that *"there is an unwritten rule in [Redco] to respond to messages within 24 hours,"* and it is almost embedded within the culture to be always connected (Interviewee A22, Regional lead for [Redco], Redco Slovakia).

The next section captures moments when employees visit offices.

4.7 Workplaces as a way of supporting employees in Redco

This section provides insights into how employees organise their work in physical spaces and describe their activities occurring in the offices.

4.7.1 New ways of 'officing'

New understandings of offices have emerged with digital working in Redco. An IT relationship manager does not spend a considerable amount of time in the office; for him, an office is *"a moment"* rather than a stable place. He explains:

> *"the way that we work has changed, and it is not so much a place where you actually go, but it is more composed of little kinds of work moments, which are not necessarily attached to a specific location."* (Interviewee A06, IT Relationship manager, Redco UK)

Since work is seen as *"a moment"* for some employees, it is portable in a sense that employees can start their day at the office, continue elsewhere and finish the work at home. The IT Manager working in Redco in France comments on the choice of working:

> *"we are not workstation anchors, which means that we are not specifically isolated and not attached to the specific work location. You have a choice of working from home or working from the office. I can start up my work from home, continue from the office, go to a customer and come back home and still be connected throughout the day. It's balanced, which means if you want to meet with friends, if you want to go to the office or*

whatever the reason, you can, but if you have to focus on something because you have to fill in the documents ... today you can stay at home and do this job and then go to the office." (Interviewee A09, IT Manager, Redco France)

New practices have emerged with the change of office space to open-desk policy that created extra work for employees. These activities include searching for a desk in the morning, for example. A Software Manager explains that he had to choose where to work:

".... when you go to the office, you do not have a designated desk. I mean we do not have closed offices for people, except if you are a VP. It is an open-desk policy, you sit where there is a space for your department. Usually, you have to rush in the morning so you can choose the desk you want." (Interviewee A20, Software Manager, Redco UK)

The choice of location arose as an issue related to enhancing personal productivity without being disturbed and distracted. This is evident in an interviewee's comment below:

"My office in Glasgow is open plan anyways; when it is busy, it is noisy. And I think I need to go home; I need to concentrate." (Interviewee A10, IT Manager, Redco UK)

Other employees thought the office was disruptive and noisy. For instance, an IT engineer is more productive when working from home. Alternatively, when he comes to the office, he usually starts early in the morning and can focus on his work without being distracted. The open space allows him to be more social with his colleagues but appears to be disruptive since the "knock-on-the-door" effect is diminished. He says:

"I like to come to the office early at about 8.30 [am] and during the first hour when everyone starts coming in, I get so much work done. Then I get distracted, people start to come in, they say hi or you get side-tracked by something. Sometimes I would choose to work at home when I have so much work to do, but then you lose the whole vibe of the office. I prefer to work a bit later and have that interaction going on, rather than getting my work done and be productive at home. So I sacrifice a few hours of work productivity for interaction." (Interviewee A31, IT Engineer, Redco UK)

The next section elaborates on the use of offices as a space for meeting colleagues.

4.7.2 Office as a place for socialising

Not all employees in Redco were willing to work purely in the digital environment, and, therefore, they chose to maintain relationships with colleagues by going to the office. This was evident in the case of an IT Analyst who explained how he interacts with his colleagues and extracts knowledge from them when he visits the office in London. He says that there is less effort required to maintain relationships if colleagues are located next to him.

"I like the office environment, ... we have a small team presence here as well and it is nice to see people and to interact. I get lots of juice from other people. So when I see people having fun, having conversations about work, you learn so much from these gatherings." (Interviewee A27, IT Analyst, Redco UK)

An IT Manager who was working in Redco for many years said that at one point in his career he was isolated because all his colleagues were located in America. For him, the office environment was not necessarily a vital part of conducting his work tasks because he managed a global team, but it represented a space where he could socialise and meet colleagues from other teams. He elaborated on the specific moment in his career when his office meetings were reduced to a minimum or even totally omitted, and he felt the lack of contact.

"Generally, I go in the office because I want to see people to get some interactions. After working at home for about six years, I think I was climbing the walls when I needed to see people, you know, face-to-face" (Interviewee A10, IT Manager, Redco, UK)

From these instances, it was evident that in-person interactions are clearly valuable in Redco, and the office spaces provide employees with such support. The open-space office plan served as a 'bridge' between various teams. Furthermore, teams located on one floor organised quarterly informal events. A graduate who worked as an IT Analyst explained that these social events were useful to broaden his social network.

"We have things called potluck lunches, basically, one department hosts lunch for everyone else and everyone gets together and talks and it is actually easy to meet people. But if you are not in the office it gets quite difficult if you are a normal employee you still have the exposure; but if you are a grad working from home, it will be hard to expand your network outside of your daily job. Because I hardly work with anyone in this

office…" (Interviewee A27, IT Analyst, Redco UK)

Another interviewee comments that these informal events are happening in individual offices in various countries as part of strengthening social interactions among employees in a local environment.

> *"Individual offices are doing events like a summer party with families, where they are organising events through a steering committee. So each office has a steering committee. For example here in Munich, we would have sausages and pretzels, and breakfast. In Frankfurt, they're doing something else and in Prague, they're doing something else. So there is always a bit of a social component … it is important to get people together in one office and to strengthen the sense of community."* (Interviewee A04, HR representative, Redco Germany)

The next section explains the blurring between digital and physical spaces.

4.7.3 Straddling digital and physical spaces

This section elaborates on the instances when physical space influenced digital space and vice versa.

An employee who works as a System Coordinator in London explains how she was able to build a relationship with a remote colleague located in Amsterdam via WebEX meetings. She explained that her and her colleague, [Paula], met once face-to-face during Redco's annual conference. This example shows that the constant contact via WebEX meetings created the impressions they had met in-person more than they actually had. She said that they sometimes have coffee breaks together via WebEX meetings and talk about their personal matters. She continues:

> *"I have worked with [Paula] for about two years now, and we only met once. I feel like we know each other quite well, though, I talked to her when my daughter was deciding where to take her summer placement, I know about her two boys and we occasionally have coffee chats together. She grabs a cup of coffee, and I have mine and we just chat … about work and also personal stuff."* (Interviewee A19, System Coordinator, Redco UK)

Interestingly, the creation of relationships between employees in Redco worked both ways, by supporting relations through WebEX social among those who were dispersed around the globe as seen in the previous example; but also WebEX social strengthened the relations among employees who were in the offices. A large proportion of Redco's employees are engineers who according to the IT leader are not social even when they are located in the same office. This is when the IT leader realised that to support these employees a new tool was needed. Hence, the company implemented WebEX social to support and enhance collaboration among engineers in Redco. He continues to explain:

> "… Engineers in IT who were usually sitting in their own office environment, heads down, very rarely they lift their heads up to speak to their neighbor; how can we get them to talk to one another using the IT capabilities to become social again?.. And share ideas, and not just the face-to-face with the computer screen. And I think that's what drove us to say we have got to become more social from a business perspective so that's when the whole social model of creating a different means of communicating started. And it worked! The engineers started to create their own groups on WebEX social and the whole collaboration between them started there… you know this whole liking, commenting, sharing pictures or videos got them all started" (Interviewee A01, IT Leader EMEA, Redco UK)

Another instance of the 'blurring' of digital and physical space was observed during shadowing when the researcher noticed that an IT Analyst was using her instant messenger almost all the time. The researcher asked her to describe the instances when it was used and for what purposes. The IT Analyst mentioned that she used instant messenger to check the presence of other employees and to see if they were around. She said that if she wanted to see if someone was in the office, she 'pings' him first (she referred to sending a quick message) and asks him if he is at his desk. The expectations of being in the office have changed, and finding colleagues at their desk is not guaranteed, but rather seems to be the exception. The IT Analyst expands on her thought:

> "Since people don't come to the office every day, you cannot say 'ok they arrive at eight o'clock in the morning and they leave at five.' That's not how it works [at Redco]. Because the person is not sitting next to you, then you don't know when he is coming, where he is… And there is no guarantee that he is in the office… So I usually check his

[instant messenger] to see what his status says, ping him and say 'hey, are you around?'
and if he is, I will go see him. He might be sitting on the same floor, but you know this
way it's just easier." (Interviewee A13, IT Analyst, Redco UK)

The next section summarises this chapter and highlights the key themes that emerged out of this analysis.

4.8 Summary of findings

This chapter began with the explanation of the case of Redco, where the fieldwork was undertaken. Further, I specifically focused on the 'Digital nomadic' strategy and the elements of this strategy were thoroughly discussed. I clarified that this strategy required changes within organisational policies; it involved adoption of new digital media and the redesign of Redco's physical space. The remainder of this chapter focused on the stories of employees at various hierarchies and geographies at Redco and it required an in-depth analysis of responses organised into different themes.

The first theme set a base for digital nomadic practice by discussing the use of digital spaces (*one-to-one space, team space and community space*) and how employees chose between these digital spaces. Additionally, employees stated that *one-to-one* space was predominantly used for strategic meetings, *team space* was used for everyday tasks and group interaction, and *community spaces* was mainly utilised for connecting employees within a wider organisational network.

The second theme focused on the interactions in terms of frequency and intensity of information streams and elaborated on the practices of how employees managed their interactions and connectivity. Although employees did not perceive that they were over connected, they explained their personal strategies associated with connectivity management, which included personalisation of their digital media or the extreme case of switching their devices off.

The third theme discussed the role of physical space of this digital work, which was Redco's office. Employees described that the office was not used for conducting their work tasks; instead they demonstrated the value of socialising and highlighted the benefits of meeting their

colleagues in the office.

The fourth theme analysed the 'blurring' between digital and physical spaces and explained the instances where such 'blurring' was visible in Redco. For instance, this was evident when employees stated that they were able to build relationships over digital media and at some point they forgot that there were not in the same physical space.

All these themes are closely related and together fabricate the multifaceted nature of digital nomadic practice. In the next Chapter 5, I draw on the data from Redco presented in this Chapter and the literature discussed in Chapter 2 in order to conceptualise digital nomadic practices within an organisational setting.

5 DISCUSSION

5.1 Introduction

This research aims to contribute to the domain of IS research with the novel understanding of new work practice now underway in a modern organisational setting, which I call the digital nomadic practice. This identification involves unraveling how digital nomads manage their connectivity levels when using various digital media simultaneously and also it involves considering the technology choice when working in digital spaces. Further, I enhance the understanding of the role of physical space that is changing with the rise of digital media.

I start with the explanation of the technology affordances, and how individuals choose between these technology affordances by using the terminology of moving *'within and between'* digital. I also explain how the physical and digital spaces are becoming *'blurred'*, which is further elaborated in Section 5.2. To continue, Section 5.3 presents how digital nomads cope with being constantly connected and I highlight the different modes of being connected - *operational, organisational and social connectivity*, which stems from the findings. Section 5.4 presents the main concept of this thesis, which is digital nomadic practice and I emphasize on the different types of digital nomads who move between digital and physical spaces, manage their connectivity levels when using plurality of digital media in conjunction, within an organisational setting.

5.2 Digital nomadic practice in digital and physical spaces

5.2.1 The affordances of digital spaces

I begin by examining the digital spaces and its affordances that have been discussed by digital nomads in the previous Chapter 4. The discussion of affordances builds on the studies that have focused on identifying the affordances of various digital media. Instead of focusing on each digital medium and highlighting its affordances, I identified different digital spaces - *one-to-one space, team space and community space* and the affordances within that space. Further, Table 12 presents the preference for the digital spaces, the technology associated with a

specific digital space and the affordances within that digital space.

Digital spaces	Preference for digital space	Technology	Affordances within the space
One-to-one space	Focused Interactions around sensitive issues	Telepresence (HD, low latency audio and video)	Visualability
Team space	Focused Interactions around daily work tasks and spontaneous meetings	WebEX Meetings (video conferencing, whiteboard sharing, screen sharing, recording); WebEX social; Wiki	Editability
Community space	Open Interactions, Organisation wide collaboration	WebEX social (my workspace, social presence, search, following); Instant messenger Email	Associations Searchability Reachability Visibility

Table 12: Digital spaces

The preference for *one-to-one* space was associated with *sensitive and critical issues,* and when 'rich' cues of the digital spaces were needed. Digital nomads (Interviewee A10; Interviewee A09; Interviewee A05, Interviewee 4) mentioned that Telepresence or WebEX meetings were preferred for strategic meetings and annual performance reviews, where sensitive matters were discussed. The traditional research on media choice explained the preference for face-to-face interaction and stressed that face-to-face was used for difficult or ambiguous communication, because it allows for non-verbal cues (e.g. visual features and body language) and rapid feedback (Treviño, Webster and Stein, 2000).

Digital media have advanced since this research on media choice was published, and 'the rich media' such as Telepresence can more than adequately supplement or even replace face-to-face contact as it was evident in Redco. This was seen in a case of Senior Director (Interviewee A05, Redco UK) who said *"..after five minutes you forget you are using Telepresence"*.

The research on affordance theory was reviewed to find an affordance that would sufficiently represent this space, which was the affordance of visibility. It is tied to the amount individuals spend locating their colleagues or information. For instance, if it is difficult to access information even when it might be available, it is perceived as not being visible, because

individuals are not aware of its existence (Treem and Leonardi, 2010; Brown and Duguid, 2001). The affordance of visibility was previously applied to social media, which provides increased visibility to information and behaviour (Boyd, 2010) and it is making the preferences, knowledge, behaviours that were invisible, now visible (Treem and Leonardi, 2012). However, this does not sufficiently reflect one-to-one space. Telepresence and similar video-conferencing digital media are not only making the communicative actions of individuals visible; rather the individuals themselves and their idiosyncratic behaviours are also visible. Hence, I believe the affordance of *'visualability'* reflects the digital space that is 'rich' in cues, where face-to-face contact is replicated by allowing the collaborators to see and react to high definition, non-verbal interactions, bodily movements and facial expressions. However, these one-to-one spaces were not used for deeper interactions with content, as with team spaces.

Team space was used when individuals needed to deal with *every-day or niche* work tasks and hence the communication is more purposeful. The preference for team spaces was seen in instances where work needed to be accessible, meaning that the message can be viewed later and hence it offers a greater transparency. Traditional digital media such as email did not allow individuals to see how the content has been edited, who edited the content and the latest versions of the content; but the new digital media allow digital nomads to modify or revise existing content, by discussing, deleting and editing, and creating new content. In that sense, the space afforded digital nomads varying degrees of '*editability'* (Treem and Leonardi, 2012). With this, the enterprise social media allowed for interactive, participatory collaboration, where digital nomads were not only able to create, join and interact with each other around content, but could also engage with content in a meaningful way.

Lastly*, community spaces* emerged when digital nomads used enterprise social media with the intention of *reaching out* and connecting with wider, often unfamiliar audiences across the organisation. In this way, digital nomads could be seamlessly connected across silos. This is similar to the research by Green, Contractor and Yao (2006) who show how social networking platform created connections between people and enhanced cross-boundary interactions. In the case of this research, social networking strengthened community ties by, creating possible links between digital nomads within the organisational setting, and by allowing informal collaboration among individuals who may never meet in person (Green, Contractor and Yao, 2006). For instance, the community space often afforded visibility, as digital nomads would

consistently use instant messenger or WebEX social to see the location of their colleagues, and whether they were available to connect in team or on-to-one spaces (Interviewee A28).

5.2.2 Movements *'between and within'* digital spaces

In this section I discuss the movements '*between and within'* digital spaces. The language used for describing the movements *'between and within'* digital spaces is built on the previous studies that explained media choice, and understood digital media in isolation and its suitability for a particular task (Dennis, Fuller and Valacich, 2008; Webster and Trevino, 1995, Daft and Lengel, 1986). The concept of movements *'between'* digital spaces aims to represented that digital nomads are not simply choosing between one medium over another, but are moving between these spaces and often use various spaces in conjunction. Hence, in this way I address some of the challenges in explaining media choice in a modern organisational context by taking into account the plurality of digital media that are often embedded within employees' practices (El-Shinnawy and Markus, 1997; Ngwenyama and Lee, 1997). Further, new digital media are now interconnected, and the previous media choice theories mainly considered the traditional digital media such as email, videoconferencing or instant messenger (Schmitz and Fulk, 1991). This interconnection of digital media was seen in several instances when digital nomads discussed how they signal 'being away' from the office. They explained that they change their status on social networking sites, which is connected to instant messenger and email. This means that they can set up direct messages saying that they are currently away from their desk, which shows on all three digital media.

In this regard, idea of nested affordances (how the affordances of digital media are grouped and relate to each other) (Gaver, 1991), helps us to understand the complex ecology of other tools and usefully adds to our understanding of individual movements between digital spaces. Nested affordances identify different components of affordances. Nowadays, the interface objects such as buttons do not longer interest the users and are not recognized, as these technologies become routinely embedded in individuals' work practices, and became invisible (Leonardi, 2012).

Further, I found that affordance nesting was connected to *the content of interactions, and individuals' intentions for using the content*. Table 13 summarizes the affordances nesting based on the content of interactions or intention for using the content, the affordances

associated with a particular type of nesting, material properties of technologies enabling this nesting, and features within the technologies.

Affordance nesting	Affordances	Material properties of technologies	Features associated with the affordances
Critical or sensitive content	Visualability	Telepresence Number of digital media providing high quality image, and nearly face-to-face interactions	HD Low latency audio and video
Collaborating around the pieces of content	Searchability Reachability Visibility and Associations	WebEX social Instant messenger Email Digital media that make it possible to connect individuals who can interact around specific content	Search Presence Following My workspace Forums Profiles
Modification or co-creation of the content	Editability	WebEX Meetings WebEX social Wiki Digital media that allow for content to be accessible with the possibility of editing it at all times at any place	Video Whiteboard sharing Screen sharing Recording

Table 13: Affordance nesting

When digital nomads did not intend to connect or communicate around specific pieces of content, they would often leverage social media's *searchability, reachability, visibility and association* affordances in community spaces. When interactions called for the modification or co-creation of content, digital nomads would leverage social media's *editability* affordances in team spaces. Finally, when content was critical or sensitive, such as with intangible and personal issues, digital nomads would often leverage social media's *visualability* affordance in one-to-one spaces.

The affordance nesting explained how digital nomads move *'between'* digital spaces, but combining this with the idea of *'grouping of technologies'*, makes another contribution to

Rossitto, Bogdan and Severinson-Eklundh (2013) *'constellations of technologies'*. The idea of technology being constelled goes beyond affordance nesting as it does not only help to understand the integration of various digital media that are meaningful to individuals, but also acknowledges how technologies are becoming integrated when similar technologies need to be used among collaborators. While, Rossitto's (2013, p. 158) research specified that "*the human, social and placial*" practices were intertwined with making a constellation work, they did not mention, which constellation of technologies exist and how these digital media are constelled together. However, my study illustrates that as digital nomads have various intentions for their content, they leverage diverse affordances that are related to different technology features. For instance, when the content was inconsequential, digital nomads used instant messenger and WebEX social features. When the content was of some consequence, digital nomads combined WebEX social features with WebEX meeting, wiki and email features. Finally, where the content was of great consequence and/or intangible in nature, digital nomads focused more on WebEX meeting and Telepresence features and side-lined WebEX social features.

Similar to Rossitto, Bogdan and Severinson-Eklund (2013) and Orlikowski and Robey (1991) findings, I found that individual collaborative movements *'within'* a particular digital space was prone to conflict and negotiation because different nomads often used specific features in different ways. As Norman (1999) explained, there are several situational constraints associated digital media use. In this case there was absence of a collaborator that can be seen as a constraint in synchronous interaction and hence the digital nomads would switch to asynchronous digital media. On the other hand, the collaborative movements *'within'* digital spaces were often related to the content of work tasks, and digital nomads moved between spaces when different sets of affordances and features were required for their task. This movement was relatively seamless and uniform across different groups of individuals. This seamless movement between spaces was in part enabled by the fact new digital media such as enterprise social media have many affordances embedded in a single platform. To support this finding, a digital nomad who works as a communication and collaboration IT showed explained these movements between the spaces within the enterprise social media platform (Interviewee A14).

This section reviewed the different digital spaces and their distinctive set of affordances, and also individual preference for each of the digital spaces. In doing so, I have also explained the movements *'within and between'* these digital spaces and the factors that influence these

movements. The next section discusses the movements '*within and between*' digital and physical spaces.

5.2.3 Movements '*within and between*' physical and digital spaces

Although the different digital spaces satisfy all the interaction requirements, it is important to understand how this shapes and impacts on the in-person interactions in the workplaces. The vision of '*placeless work*' is too simplistic particularly since we are increasingly seeing that workplaces have and are still changing, to complement digital spaces (Schwarz, 2003; Arefi, 1999). I demonstrated that the digital and physical spaces are *blurring* by showing how digital nomads move '*within and between*' digital and physical spaces. The *blurring* between digital and physical spaces is built on the previous research that acknowledges the 'hybrid spaces' (firstly defined by Deleuze and Guattari, 2002, p. 380), and others have focused on traditional technologies such as mobile phones that reconfigured *"the real world"* (e.g. Jordan, 2009; de Souza e Silva, 2006).

Specifically, digital nomads believe that they are in fact working nomadically just by leveraging simultaneously 'rich', synchronous and asynchronous interactions that are afforded by new digital media, to work from one physical location. A commonly referenced example of '*blurring*' between digital and physical spaces is illustrated in how digital media now allow for the replication of 'water cooler' conversations in digital spaces or building informal social contact that was previously associated with interactions in physical spaces (as seen in the instances of Interviewee A19). Also, it was shown in several cases that the physical spaces were not used for work purposes and digital nomads might have never met face-to-face during the time of the project.

This finding goes against the previous studies on nomadic work that intensively researched the need for face-to-face interactions for effective teamwork, which helps to strengthen relationships, produce commitment and to establish greater task clarity (e.g Maznevski and Beise et al. 2004; Chudoba, 2000; Kraut et al. 1998; Jarvenpaa et al. 1998). Some have even claimed that face-to-face meetings are like *"heartbeat, rhythmically pumping new life into the team's processes…"* (Maznevski and Chudoba, 2000, p. 486).

However, with the new digital media it is becoming increasingly common that individuals only

meet when there is an opportunity, and the lack of interactions in physical spaces does not necessarily mean a negative outcome. Additionally, new digital media with simultaneously 'rich', synchronous and asynchronous functionalities enable very different opportunities for connecting individuals in digital spaces (Kietzmann et al., 2011; Majchrzak and Markus, 2012; Rice and Leonardi, 2013). For instance, previously researchers have claimed that it is not possible to develop durable forms of trust over digital media (e.g Jarvenpaa and Tiller, 2001). Further, a number of digital nomads in this study suggest that they are able to build lasting and durable relationships because new media are increasingly narrowing the gap between the digital and physical elements of work (Interviewee A19). This is an important finding, which add to the literature studying trust building in virtual teams (e.g Jarvenpaa and Tiller, 2001; Kotlarsky and Oshri, 2005; Nandhakumar and Baskerville, 2006) as my findings suggest that trust and relations can be established over remote interactions, and collaboration can be effective even when digital nomads never meet face-to-face. Some even suggest that a mix of in-person and digital interactions could be relevant and more suitable to collaborative practices than the single use of in-person interactions (Nardi and Whittaker, 2002), which is not always possible as it was shown in this case. Also, rather than agreeing which of the spaces – digital or physical - is more imperative, we should acknowledge their interrelatedness as an important aspect for digital nomads to stay in touch and conduct their work.

While I claim that the digital and physical spaces are *blurred*, there is a level of connectivity required to connect digital nomads in these spaces. Hence, the next section focuses on the different connective levels that *blurred* digital and physical spaces during digital nomadic practice.

5.3 Connectivity from digital nomadic perspective

The previous sections illustrated that digital nomads in my study considered digital media as an essential part of their work practice that kept them up-to-date with work tasks and allowed them to be connected without constraining them to a physical space. However, there were several cases in the current literature that demonstrated the paradox of the digital media enabling flexibility and imposing constrains causing digital nomads to be constantly available (e.g Cameron and Webster, 2011; Reinshch et al. 2008; Mazmanian, 2013). The newer studies addressed the interruptions associated with using digital media and the blurring work-life boundaries (e.g Mazmanian, 2013; Leonardi, 2010); and appeared to have a common

perception that digital media impact negatively on individuals' performance (Kolb, 2008). In spite of the importance of digital media for nomadic workers, research studying connectivity and interruptions attempted to measure the occurrence of interruptions, but it lacks in addressing individuals that shape the mode of connectivity. Hence, these interruptions were viewed externally to the individuals (Fonner and Roloff, 2010).

Paying attention to connectivity management enhances the current studies that question the degree of connectivity required for digital nomads to be engaged, productive and to accomplish their tasks. I will further discuss the three different mods of connectivity that emerged from the findings and these are – *operational, social and organisational connectivity*. These different connective modes represent a way of understanding if and when digital nomads feel over-connected and on the other hand, when connectivity is lacking.

5.3.1 Operational connectivity

Digital nomads were often away from their office spaces, which current and established understandings of nomadic work, equate to less time spent being operationally connected to conduct work (Makimoto and Manners, 1997). However, social media capabilities and the affordances of editability with the ubiquity, accessibility, portability of digital media created 'always on' behaviours, and were central to enabling a new kind of digitally enabled operational connectivity needed for work tasks. The 'always on' behaviour was evident in various instances when digital nomads expressed either receiving a high volume of emails or being accessible at all times.

In this case it was shown that the work practice is reshaped as digital nomads constantly balance their connectivity levels by using various coping mechanism without disrupting their productivity or workflow. The strategy of managing operational connectivity was associated with using technology in a way that would allow digital nomads to adjust their operational connectivity to better suit their idiosyncratic behaviours and needs. For example, digital nomads used the 'presence feature' to limit their availability and operational connectivity, as seen in several distances of digital nomadic practice (Interviewee A09; Interviewee A15).

Especially a digital nomad (Interviewee A21) noted that she continually checks notifications of her phone, and in this instance the digital nomad adopted a device that helped her to fulfil the work task. Interestingly, in contrast to prior studies (e.g Barley and Kunda 2004; Kunda 1992;

Perlow 1998), digital nomads did not feel that phone made them constantly connected even when they checked it outside of their work hours, rather they perceived it as an engagement and a matter of flexibility that allowed them to work anywhere and anytime. Such an action can be attributed to individual's personality or associated with high achievers who want to actively participate and share their knowledge (Majewski, Usoro and Khan, 2011), but most importantly a common aspect of being over-connected is attributed to those employees who work on multiple projects with various teams as mentioned by all the digital nomads.

However, if digital nomads felt that they need to disconnect, one of the most severe coping mechanisms was to simply switch off, by turning off their devices during non-work time. This behaviour was especially seen when digital nomads recognized that their work is permeating their life (as seen in the example of Interviewee A10). Additionally, this digital nomad had to respond to various alerts indicating his presence in digital spaces and he made a decision on how to address this connectivity. For instance, digital nomads used personalisation as a coping strategy when he customized his email, status on instant messengers or social networking site to either cope with the excessive demand or to postpone the communication. This example shows that the patterns of technology use emerged as digital nomads responded to situations in order to keep the same performance, or deal with performance preferences. Nevertheless, the digital nomadic practice was not only up to individuals' discretion to keep up with the performance; but the organisational norms required availability and hence digital nomads worked outside of their normal working hours. This is in line with previous findings that indicate that organisational culture and norms impact and influence the technology use (Mazmanian, 2013).

The operational connectivity has increased with the capacities of digital media that amplify the connective behaviour, and can potentially cause digital nomads to be over-connected at the operational level. However, because of the new digital media affordances, most digital nomads were able to manage their connectivity, while still being able to accomplish their work practice.

The next section describes a mode of connectivity that goes beyond 'the operational connectedness' and is associated with being organisationally connected.

5.3.2 Organisational connectivity

Organisational connectivity refers to connecting individuals within a broader organisational network, particularly among individuals who might not have been previously connected. Being connected at the organisational level allows digital nomads to have exposure through the affordances of visibility, reachability and searchability within the organisational-wide network. Further, it is also related to the increase communication flow between digital nomads due to the ease of making connections within the organisational network. Focusing on organisational connectivity allows us to understand not only the individual aspect associated of managing connectivity, but it also illuminates collective consequences associated with being organisationally connected, which extends the prior research on connective behaviours (Kolb, 2008; Leonardi and Kallinikos, 2008; Mazmanian, 2012).

I observed that a connected culture emerged among individuals who used new digital media within Redco. Being organisationally connected meant that digital nomads could easily reach colleagues and teams members, access their knowledge, and simultaneously collaborate synchronously and asynchronously within an organisational network, transcending time and space boundaries. The previous studies on network connectivity found that connections are more successful when there was a direct link to organisational members (Castells, 2007), which was also evident in this study. For instance, in Redco, digital nomads could see colleagues, their experiences, and information with a single click within the enterprise social network. However, features such as tagging and friend recommendations helped digital nomads to easily add members that were not in their immediate network. There was not an extra effort required to form or join communities.

In this way, organisational connectivity was crucial for strengthening the organisational culture by enabling the transfer and reinforcement of norms, which positively impact on engagement (MacCormick et al. 2012). These norms then directly or indirectly influenced the practices of digital nomads (Schein, 2006). For instance, a digital nomad in Redco said it was 'an unwritten rule' to respond to communications within 24 hours. This compelled digital nomads to continually monitor their phones to stay update or 'in the loop'. It raised expectations of being organisationally connected within the setting and expanded the connectivity within the network. One of the strategies of coping with connectivity was multi-tasking, and digital nomads stated they often multi-tasked in order to fulfil their work task while being in control

(Orlikowski, 2007). Consistent with Mazmanian, Orlikowski and Yates (2013) study on how digital media are increasingly reinforcing cultural expectations of responsiveness and accessibility, I argue that these expectations are driving an emerging, digitally enabled culture of connectedness.

The next section focuses on staying socially connected and describes the instances how social connectivity occurs.

5.3.3 Social connectivity

Social connectivity was viewed here as feelings of staying in touch, building and sustaining relations with colleagues even when the physical spaces were not visited. Prior studies discussed that face-to-face meetings helped to establish greater social connections (Robey et al. 2000), but as the frequency of face-to-face meetings reduced, especially with nomadic working, researchers acknowledged that being socially connected is different in digital and physical spaces (Maznevski and Chudoba, 2010; Wei, 2006). Some researchers did not believe that the same social connectedness could be established online as in person (Cacciopo and Patrick, 2008). Further, studies even suggested that individuals might behave differently online than in face-to-face situations, since the normal routines such as greetings and handshaking are missing in nomadic environment (Hylmö and Buzzanell 2002). The absence of social connection in person could potentially lead to being disconnected and impact on their willingness to share their knowledge and feelings with others (Bradner and Mark, 2001; Biocca, and Harms, 2002).

However, I enrich these studies on being socially connected as my findings indicated that with the advances in digital media, it is possible to have the same social connectivity in digital spaces as in physical spaces, as it was shown in the example of Telepresence that affords visualability. Complementing the work on social connectivity, the present research suggest that digital media, in general, and enterprise social media, in particular, created a number of possible connections around collaborating and socialising that facilitated more personal conversations (Majchrzak et al. 2014). As an instance, a digital nomad who worked as a system coordinator in Redco said that she was able to develop social relationships with her colleagues via WebEX meetings. Also, the same digital nomad stated that she was having coffee breaks with another colleague through digital spaces (Interviewee, A19). Hence, this adds to the

current work that explores a sense of social connectedness to others via digital media and in particular it could be linked to the research on the physiological mechanisms that contribute to feeling socially connected (Carr and Walton, 2011). However, in this case it was linked to technologies that facilitate and support social connections, which was associated with the feeling of closeness (Gooch and Watts, 2015) or in other words individuals are socially connected to others when they feel co-present (as seen in the studies of Biocca, Harms, and Burgoon, 2010, Schroeder, 2002).

Apart from this, social connection was established through the interactivity afforded by the enterprise social platform, which included features such as following, sharing, commenting or liking (e.g Majchrzak et al., 2014). I also found that digital media supported digital nomads and enhanced their collaboration as it was evident in a groups of engineers located in the same office, who were not collaborating before (Interviewee A01). Consistent with the former example, digital nomads commented that the number of digital communities was significantly increasing to support social connectivity because there were fewer opportunities to connect in person. In this regard, while some studies point out that this kind of social connectivity may result in overload that can eventually strain social relations (Fonner and Roloff, 2012), I found that digital nomads used tags, lists and RSS feeds to filter and receive only information that was necessary for them. This was also evident in the instance of digital nomad who commented on receiving relevant information (Interviewee A04).

Having presented the different connectivity modes, the next section will summarise the connectivity as interplay between digital and physical spaces.

5.4 Towards a new perspective: Digital nomadic practice

To provide a concise overview of digital nomadic practice, Figure 8 depicts the core aspects within the digital nomadic practice, including the different types of digital nomads (pastoralists, hunters and gatherers, tinkers or traders), connectivity, affordances associated with digital and physical spaces and the interactions that are possible within these spaces.
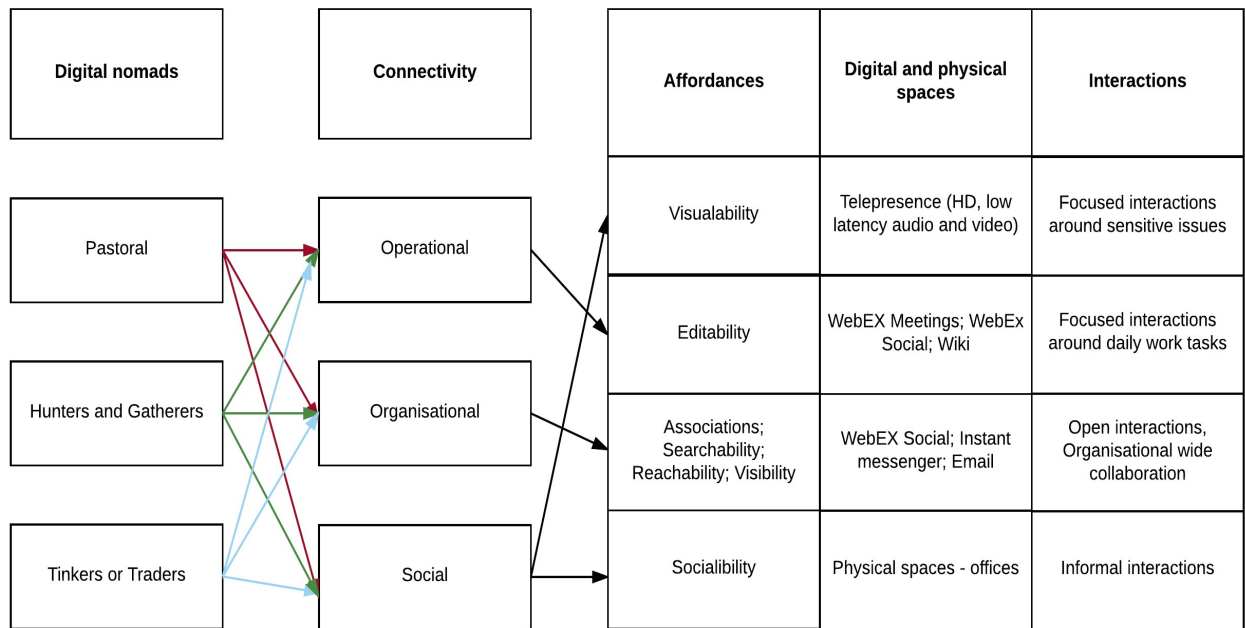
Digital nomads	Connectivity	Affordances	Digital and physical spaces	Interactions
Pastoral	Operational	Visualability	Telepresence (HD, low latency audio and video)	Focused interactions around sensitive issues
Hunters and Gatherers	Organisational	Editability	WebEX Meetings; WebEx Social; Wiki	Focused interactions around daily work tasks
Tinkers or Traders	Social	Associations; Searchability; Reachability; Visibility	WebEX Social; Instant messenger; Email	Open interactions, Organisational wide collaboration
		Socialibility	Physical spaces - offices	Informal interactions

Figure 8: Digital nomadic practice

With this framework I aim to highlight the importance of considering agency in deciding the type of connectivity that is needed, which is based on the choice of digital or physical spaces. I observed that these strategies happen at multiple levels, as digital media coexist together and provide combination of various affordances. Indeed, to analyse this interconnection have encouraged me to go beyond the current understanding of nomadic work. Prior studies focusing on nomadic work did not consider individuals being stationary in the offices as nomadic. However, in the case of Redco, digital nomads were not necessarily nomadic in their movements between physical spaces, which was evident in various cases - Interviewee A06; Interviewee A14; Interviewee A03.

This is in line with Kakihara and Sorensen (2002) whose research states that we can understand interactions that individuals perform as a characteristic of mobile work, rather than just focusing on the geographical characteristics of mobility. Additionally, Makimoto and Manners (1997, p.17) noted that digital media afford the creation of both, the *'ultimate nomad'* or someone who is on the move at all times; or the *'ultimate couch potato',* who never leaves the office, as digital media permit individuals to be freed from the constrains of time and space (Kakihara and Sorensen, 2002).

Drawing on the previous research from anthropology on nomadic tribes can help us to understand the strategies of digital nomads within the workplace, as their movements are

"highly purposeful, oriented towards achieving specific production…goals" (Salzman, 2004, p.40). As stated in Chapter 2, there is a distinction between pastoral nomads, hunters and gatherers, and tinker or trader nomads.

To recapitulate, *pastoral nomads* are autonomous, but live in communities and seasonally move between places in order to find resources for survival by using domestic objects. Pastoralists work alone, but they are rarely in a total isolation from others (Wolff, 2014). Within the workplace, when pastoral digital nomads needed social or operational connectivity they changed their physical setting based on their preferences. Further, being operationally connected meant that they needed a quiet space for work. On the other hand, when they wanted to be socially connected, they searched for 'in-between spaces' or community spaces. Redco's offices were therefore architecturally designed to balance these private and social needs, by respectively having formal spaces for work (workstations and meeting rooms) as well as accommodating spontaneous, unplanned or partially planned gatherings, which according to Fayard and Weeks (2007) allow for informal interactions.

Within the digital spaces, when pastoral digital nomads strived to be operationally connected, they used the affordance of editability through WebEX social, WebEX meetings or Wikis. For instance, if the collaboration was required with someone in different time zone, pastoral digital nomads used asynchronous digital media, such as Wikis or WebEX social if the reply was not urgent and the collaboration was around content. However, WebEX meetings was used when the interactions was around some pieces of content were required, and often their work time stretched beyond their standard work hours.

Hunters and gatherers move daily and shift their habitat in order to find wild resources. Further, they are dependent on their environment and usually participate in collective strategies to be more efficient in their work (Wolff, 2014). When hunter and gatherer digital nomads choose to be socially connected, they can use the affordance of visualability through Telepresence. These interactions through Telepresence tend to be focused on sensitive matters, and in this way they do not compromise the flexibility of digital nomads and their obligations of being available in certain place. Further, the interactions are only communicated among those individuals who are directly participating in this way it is possible to strengthen and develop social relations with colleagues (e.g Stuart et al. 2012).

Finally, *tinker or trader* nomads are traditionally coupled with a larger society and maintain a

mobile way of living such as gypsies (Wolff, 2014). Based on this description, when tinker or trader digital nomads indicated the preference for being organisationally connected, they used the affordances of associations, searchability, reachability or visibility through WebEX social, instant messenger, or email to find skills of their colleagues in order to collaborate within the organisational network. Further, through the social networking tools they keep updated on the organisational happenings, which is related to the literature on engagement. The research on nomadic workers often stated that employees are disengaged meaning that they are not committed to their jobs (Baumruk, 2004; Richman, 2006; Shaw, 2005; MacCormick et al. 2012). However, enterprise social media was used to increase engagement through visibility and to ensure that individuals are aware of the type of information they have access to or they know where they can find their colleagues.

Based on this framework we can see how nomadic work practice has been redefined within an organisational setting.

The examples, which were discussed, showed how digital nomads worked in an environment that was technology rich, by managing the connectivity of digital media that afforded portable, ubiquitous, convenient, always-on and connected behaviours. I show that conceptualising digital nomadic practice through the interconnections of the dimensions, can help IS researchers gain valuable insights into the dynamics of digital nomadic practice and provide new insight into their work practice within an organisational setting.

5.5 Summary of the chapter

Throughout this chapter I aimed to answer the research questions and to analyse the digital nomadic practice within an organisational context. The modern organisational context where digital nomads operate is characterised by increasing connectivity across physical and digital spaces, and shifting operational, organisational and social norms. At a social level, I particularly observed that digital nomadic practices were driving an emerging culture of connectedness, where digital nomads were not only always expected to be accessible and responsive, but in most cases, they had accepted this as a norm. However, I noticed that digital nomads easily manage their connectivity levels, by employing operational strategies to be adequately connected. This is in line with the research by Kolb (2008) who states that if individuals are able to manage their connectivity levels then they have 'requisite' or have an

adequate connectivity.

I also discussed how digital nomads choose various technologies move *'within and between'* digital spaces. It was evident that even though the work is happening in digital spaces, physical spaces have changed and these spaces are becoming increasingly blurred. As a result, the activities and social processes that were previously tied with physical space could be easily replicated in digital spaces. These moves *'within and between'* physical spaces were influenced by the nature and content of tasks, which conditioned when different sets of affordances were used.

I found that even stationary digital nomads are nomadic, not in their physical movements but in their interactions. This stems from the fact that digital media with its novel affordances allow for more personalised interactions that goes beyond spatial and temporal boundaries. For instance, even when digital nomads were located in different countries, digital media transcended this distance and allowed them to develop relations with colleagues and enhanced the feeling of being in the same place with them. This finding provides a new way of thinking how modern organisations need to account for this change, and should re-consider the current work practice that could be potentially nomadic without actual physical movements. This chapter described digital nomadic practice as a novel phenomenon that was based on the integration of various elements that contribute to this practice.

The next chapter concludes this thesis, and offers theoretical and practical contributions, future directions and highlights the possible limitations of this research.

6 IMPLICATIONS AND CONTRIBUTION

6.1 Introduction

This concluding chapter offers a consolidation of the thesis outcomes and provides an overview of how the research of digital nomadic practice was undertaken. To summarise, I will further highlight the theoretical contributions in Section 6.2; the practical contributions are discussed in Section 6.3. Further, Section 6.4 describes limitations and research challenges, followed by Section 6.5, which mentions the future research opportunities of this thesis. Finally, Section 6.6 provides the concluding remarks.

I have analysed studies within the IS literature on the subject of nomadic working, technology adoption, connectivity and affordances; and together with my empirical case I aimed to answer my research questions, and provide new insights into the IS literature. To reiterate, my main research question and sub-questions were as follows:

How does the digital nomadic practice emerge within modern organisational setting?

   i. *How do individuals simultaneously use multiple digital media to conduct their work practice?*
   ii. *How do individuals manage the intersection between digital and physical spaces?*
   iii. *How do individuals use digital media in order to manage connectivity and minimise interruptions?*

The research endeavour was to conceptualise digital nomadic practice by analysing the changing work practices within an organisational setting by connecting technological, social and organisational dimensions. Further, this study identified the digital media use in conjunction through the lens of affordances, which enabled me to analyse the complex ecology of digital media within an organisational setting. I found that affordances are nested depending on the content of interactions, and individuals' intentions for using the content, which added to the media choice theories and provided a new way of capturing the technology use. This research has explored connectivity as an important aspect and outcome of digital media that impacts and affects employees' work practices. The nature of this research uncovered some under-researched areas and formed new angles to analyse nomadic work. Along with concepts introduced in this thesis, one of the major contributions was to propose the novel phenomenon

of digital nomadism as being a fundamental concept for making sense of new work practices in modern organisations. Digital nomadic practice intends to explore the work practices of digital nomads who are always connected via various digital media and who conduct their work in physical and digital spaces within an organisational setting. This effort to reconceptualise nomadic practice and redefine the scope of the research is of great importance, since the traditional geographic understanding deals only with limited aspects of the multifaceted nature of work in modern organisations (Vodanovich, Sundaram and Myers, 2010; Lyytinen and Yoo, 200).

6.2 Theoretical Contributions

I will further highlight theoretical contributions to the IT adoption literature, nomadic literature and the affordance theory.

The evidence from my research strongly suggests that digital nomads rely on a range of digital media to conduct their work practice. While some of the previous studies have acknowledged using various digital media and its impact on individuals' behaviour, they demonstrated this in high response situations and showed that short replies and the need for immediate responses fuelled multi-communicating behaviour (Cameron and Webster 2005, Watson-Manheim and Bélanger 2007). However, in terms of the nomadic environment most of the studies have analysed a single technology use in isolation of its relationship with other tools, and mainly it was related to a mobile phone use applied within a general social context (Sorensen, 2011; Mazmanian, 2012). Hence, I investigated the assemblages of various digital media used by digital nomads within an organisational context, which has been sparingly investigated. Also, it was shown that the use of multiple digital media is not an exception rather they are a norm among knowledge workers within a modern organisational context. By analysing multiple digital media, I extend the current studies on the user adoption of IT - which is one of the most heavily studied topic within the IS literature (Venkatesh et al. 2007).

Since I highlighted the presence of multiple digital media, I also recognized the media choice factors, which I interpreted through the lens of affordance. Contrary to the previous findings that are associated with general technology affordances, I have shown that individuals arrange media in distinct combinations that afford different action possibilities, based on how they

perceive the affordances of digital media. This evaluates unexplored assumptions that are relevant for theorizing around media choice in an environment where multiple digital media are present. I also recognized individual agency, which shapes media choice (e.g. Lyytinen, Burton-Jones and Straub, 2006; Davis, 1989; Turner et al., 2006; Venkatesh and Davis, 2000). In this way I extend theoretical understanding of media choice, which assumed that technologies are matched to a specific tasks, and to the degree required by those tasks (Daft et al. 1987, Trevino et al. 1990; Rice, 1992).

The previous studies on technology affordances in IS helped to explain and further understand the relationship between technology and users, and uncovered new affordances of social media (Treem and Leonardi, 2011; Faraj and Azad, 2012; Leonardi, 2011). Based on my research I highlighted affordances associated with specific digital spaces that did not only examined social media in particular, but I also investigated other technologies such as video-presence that is increasingly popular within an organisational setting. Because of this, I found a new affordance of 'visualability', which reflects to a digital space where 'rich' and face-to-face contact can be replicated by allowing the collaborators to see and react to high definition, non-verbal interactions, bodily movements and facial expressions.

Studies on technology affordances are somewhat limited in exploring any other context beyond laboratory experiments or other forms of controlled environment (Sorensen, 2011). Hence, I contribute to the growing number of researchers whose discourse is around technology affordances and new ways of working, and the new affordances of technology in contemporary settings (Treem and Leonardi, 2012; Majchrzak et al. 2014; Faraj et al. 2011).

There have been a number of calls from the IS community to consider the unintended or negative consequences of ICT (e.g Ash et al. 2004; Harrison et al. 2007; Majchrzak and Markus 2013; Sawyer and Rosenbaum 2000; Sein and Harindranath 2004). I focused on connectivity and my study examines how individuals manage connectivity, and especially what it means to be "always-on and connected". While there are some scholars that have generated valuable insight on this topic, the issue of connectivity is still an under-researched angle that has important implications for modern organisational environments. Understanding how individuals manage connectivity and what being over-connected mean for them can contribute to the research that explores work –life balance (Hisllop and Axtel, 2011), productivity (Richardson and Benbunan-Fich, 2011) or autonomy (Mazmanian, Orlikowski, Yates, 2013).

With this study of digital nomadic practice, I aim to contribute to the nomadic work literature, by rethinking the fundamental assumptions underlying nomadic research (Sorensen, 2011). Such assumptions included the bodily movements of individuals, which I found were not representative, in understanding their behaviours since digital media are now more accessible and portable (Kristoffersen and Ljungberg, 1998). Moving away from the traditional assumptions of nomadic work lead us to novel problem formulations and considerably extended the theoretical discourse by combining the concepts of connectivity, digital media use, and physical and digital space. This extension builds on, and contributes to the previous research commentary of Lyytinen and Yoo (2002) who propose more studies that connect technological, and social, and organizational elements.

Besides the outlined theoretical contributions, this thesis also offered practical implications and contributions for management.

6.3 Practical contributions

While the primary aim of this thesis was to contribute to the knowledge in the academic research, there are several practical contributions that can be drawn from this study.

Nowadays organisations adopt project-based working and encourage employees to work in a nomadic way to save operational costs. Hence, new technologies are constantly implemented to keep up with the market and to satisfy the requirements of employees. This thesis offered a rich overview of employees' technology choice and use patterns, which can aid technology designers. Since digital media are growing in their variety and advancing in their functionality; therefore, it is important to design technologies with user friendly interface, instead of focusing on its complexity that comes with the increased functionality.

An additional important issue becoming more apparent in current thinking is the aspect of being connected and available in the workplace. Nomadic workers expect flexibility in their work, but there are also certain expectations in terms of technology use and connectivity. This thesis revealed that employees rely heavily on various digital media and organisations embrace their use. However, organisations need to recognise that disconnection as indicated by some of the interviewees might be a way of ensuring that digital nomads are effective and stay productive. Therefore, policies and regarding the use of technologies should be implemented, which could for instance limit the use of technologies outside of the work hours, but in a way it

does not burden employees and compromise their flexibility in the workplace.

My findings also suggest that organisations should address the communication practices and mainly the level of interruptions. It was shown by several employees that they distanced themselves from the office in order to complete work, and an office space was used as a space for social interaction. Hence, it is important to create a work environment that would not be distracting and would balance the meeting spaces with more quiet, individual spaces for uninterrupted work.

This section suggested several practical contributions for managers and those involved in designing workplaces suited for new ways of working. The next section presents the limitations and research challenges.

6.4 Limitations and research challenges

The research initiative was attributed to the company where the research was undertaken as part of my PhD. The researcher needed to establish a balance between a scientific rigor and practical relevance as a conflict could potentially emerge. While academic research is known for creating a substantial knowledge to theory, the industry project often wants a 'quick-fix' solution that will show immediate results. In this case, a consensus was established, as the objectives were negotiated beforehand and aligned with the PhD agenda.

As with all research projects, there are a few limitations of this study that I must acknowledge, which are tied with a single site selection and the unique company case, and the access to the company and individuals.

I have chosen a single site for my research that was very suited and unique for this study. It might have been more useful to use more than one setting in order to compare and generalise the findings. However, future studies could overcome this limitation and build on this research by using equally unique case of a company that uses new digital media and it has either proven a success or failure within an organisational setting. Additionally, this company uses the same technologies internally as they sell to their customers and for this reason employees were mostly highlighting the superlatives of the technology use and did not mentioned any negative aspects.

Another limitation is tied to the access to individuals and the company, as I was only able to

spend a week at the company's premises. This was because the employees worked in a nomadic fashion and hence it was not possible to gain access to individuals at all times. Because of this, there was a limited time I could build a relationship and trust with the interviewees and hence it might have impacted on the interviewee findings, as they were speaking mostly positively of the company. The researcher tried to eliminate this limitation by creating bonds with employees during coffee breaks and lunches, and in this way gained more informal insights. However, some participants were geographically dispersed, which meant that the interviews were often brief, and there was a strict time allowance for interviews, and hence some answers could have been elaborated on.

During my data collection I attempted to collect responses from interviewees from various geographies and different hierarchical levels in order to have a broad overview of employees' practices, their views on digital media adoption and the managerial action in implementing social media within the company. It would be interesting to examine and compare the data from each geographical area in more detail to see if these technology use differs in various geographies as the countries might have different culture and norms that shape the IT use.

Further studies should consider the above limitations and extend my studies, which will be discussed in the next section.

6.5 Future research avenues

Several potential directions emerge from this study that can be examined in the future research.

This thesis contributed to the nomadic work literature with the novel understanding of new work practice - *digital nomadic practice* within an organisational setting, further studies in nomadic work are needed as this field was mostly penetrated a decade ago when most of the research articles were published on mobile ICT (Sorensen and Landau, 2014; Lyytinen and King, 2004; Lyytinen and Yoo, 2002). I have returned to this established topic and shown that individuals do not have to move from one place to another to be considered nomadic. I illustrated that this type of work behaviour is occurring among knowledge professionals within an organisational setting. For this reason, future studies should explore new nomadic work arrangements within an organisational setting supported with new technologies, not just the mobile ICT, and the behaviours associated with the technology use.

This study highlighted the presence of plurality of digital media and in particular recognised media choice through the lens of affordance. I recognised individual agency that shapes the media choice, and went beyond media choice theories that used the communication/task effectiveness as a decision for media choice. Importantly, future theories should focus on theorizing around media choice where multiple digital media are present and address how tasks effectiveness can be understood in alternative way in order to address and analyse factors that influence media choice.

Simultaneously, unexplored topics were opened for IS researcher to expand the current research agenda. I have built on the studies that discuss the impact of ICT on individuals and specifically considered the issue of connectivity, which is seen as a new and emerging angle of research (e.g. Olson-Buchanan et al. 2016; Azad et al. 2016; Flyverbom et al. 2016; Boell et al. 2016). I focused on the individual agency as a means of controlling connectivity, taking organisational norms and culture into account. I have shown that too frequent interaction can lead to several disadvantages. Future studies could elaborate on this topic of connectivity management and discuss how team members could engage in a meaningful dialogue to reach connective goals. For instance, as Mazmanian (2013, p. 1246) notes *that in certain scenarios it is possible for individuals to develop socially stable heterogeneous patterns of communication that benefit them without having received a top-down mandate, such as a 'no e-mail Friday.''* In this sense, future studies could explore the socio-material methods of coping, adapting and excelling within all states of connectivity (Kolb, 2012), and combine it with empirical research in various organisational settings to analyse the impact of connectivity on teams within organisations.

One of the key areas for future research is to study collaboration in digital spaces focusing on knowledge sharing and trust building. The majority of studies stated that a certain degree of trust needs to be present between distant collaborators, and the success of virtual working depends on the commitment and personal trusting relationships (Wu et al. 2010; Ridings et al. 2006; Abdul-Rahman et al. 2000). To develop these relationships, face-to-face interactions are needed. For instance, the research of Jarvenpaa (2000) stated that the success of the project depends if virtually located individuals meet at the beginning of the project, in order to build interpersonal relationships and trust. However, I have shown that some of the digital nomads never met in-person. This finding opens several discussions for future research, which should re-consider the conventional understanding of trust between individuals and to examine the

type of trust that is needed for knowledge sharing to occur. Since social media is widely used for collaboration, there are more studies needed that elaborate on trust building within these virtual communities and to further explore if and under what circumstances individuals need to meet in-person.

6.6 Closing thoughts

This thesis explored a novel concept associated with new ways of working, which I call the digital nomadic practice. My findings do not only embrace the tenets of prior studies, but also provide a new lens to study digital nomadic practice through the interconnection of the elements – connectivity, simultaneous digital media use and recognizing both –digital and physical spaces (Lyytinen and Yoo, 2002). I suggest that deepening such understanding has become particularly important within a modern organisational setting where new digital media coexist with the traditional ones and support the work practices of employees. Therefore, I have explored the use of digital media in conductions, while to date only handful studies focused on an organisational context where many digital media are present. As exemplified here, more studies are needed to understand the choice and adoption of new digital media, as the traditional media-based theories are no longer suited (Jung, 2015). I have discussed the digital media choice by using the vocabulary of moving *'within and between'* digital spaces and these movements were interpreted through the lens of affordance. I have shown that individuals arrange digital media in combinations based on the content of interactions, and the intention of using the content. Additionally, the work in digital spaces was complemented with physical spaces that are being adjusted to suit the work conducted in the digital spaces, and there has been a re-conceptualisation of the traditional view on the office spaces (Liegl, 2014).

Further findings from this research shown that the connectivity has increased as there is a heavy on the reliance on digital media. Hence the academics in IS research studying the use of ICT or the impact of ICT on individuals should pay more attention to this newly emerging topic (Azad et al. 2016; Kolb, 2012). I have presented how digital nomads managed their connectivity by using personal strategies and have revealed that the increase in connectivity does not mean the rise in interruptions (Mazmanian, 2012). As a result of this study, I have provided a new understanding of connectivity by introducing the three different levels of connectivity – *operational, organisational, and social,* which allowed us to understand how much connectivity is required within an organisation setting so that individuals are not feeling

over-connected or on other hand the connectivity is missing.

Considering these findings I believe that this research can be useful to a number of practitioners interested in the design and use of technologies suited for nomadic environments with novel features that would support new work practice while maintaining user-friendly interfaces. This research provides new findings for organisations that can assist them to create organisational policies, which would help employees to balance their work and life, and at the same time create an effective and productive work environment.

I hope that with my research, the IS academics and practitioners will recognize the novelty of this research and future studies will be influenced by this topic and continue with the current rhetoric on the digital nomadic practice by incorporating elements of connectivity, simultaneous digital media use and considering both digital and physical spaces for work practice.

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APPENDICES

Appendix A – Methodological details

Appendix B - Images of digital media in Redco

Appendix C – Abstracts of papers presented in academic conferences

Appendix A

Methodological details

Interview protocol

In cooperation with [Redco] I have been investigating the digital nomadism and the role of digital media in a work setting. I followed an interview protocol, which was based on pre-planned set of questions to cover the following areas:

- *Learning about the interviewee background*
- *The role of technologies in daily work processes*
- *How much connectivity is in the workplace*
- *How do interruptions impact on daily practices*
- *Employee view on organisational culture*

Since I conducted several interviews, the protocol was refined depending on the stage of the interview process, the interviewee and their status within the organisation or if more information was needed on a specific topic. The sample of interview protocol is mentioned in Figure A1 below.

Sample of Interview protocol

A) Background

1. *What is your position within [the organisation]?*
2. *Number of years employed by [the organisation]?*
3. *Size of the team of immediate co-workers?*

B) Work arrangements

4. *What is your work location? How many days a week do you spend working from home?*
5. *How long have you been working under these arrangements?*
6. *Did you previously work in collocated office?*
7. *How often do you see your colleagues face-to-face?*

C) The role of information technology in daily work processes

8. *What would a typical day look like for you? Could you describe in detail the activities you do during the day (from waking up to going to sleep, where, when and why you engage with particular media to get work done)*

a. *When do you first check the device in the day? Would you ever come to work without checking your emails from home? Why/why not?*

b. *Tell me about the tasks you are involved in and how do different media that you use help you to accomplish your work. What do you communicate about using this media (i.e., to catch up/talk, coordinate social plans, get an answer to a question, etc.)?*

c. *The default mode of communication (for your and within [the organisation])*

d. *Think of the most recent instance where you had to quickly obtain information or solve a problem that required getting information from several colleagues. Describe this incident and how you communicated with your colleagues.*

e. *Generally, how is information distributed to team members? How is formal communication done presently with your colleagues?*

f. *Do you mostly work on your own or you have to collaborate with your colleagues to get your work done? (How many hours/week do you spend collaborate/working with others?)*

D) Connectivity

10. *How many hours a day do you spend being connected through different ICTs?*
11. *During typical day how often do you exchange information with colleagues via ICT?*
12. *During the course of a typical day, how often do you meet with colleagues to share information?*
13. *When a colleague is located in the same building, when would you contact him/her via email and when you would see him/her f2f?*
14. *Are there certain people that you tend to talk to via particular media? Why? What makes this happen? What about the reverse? Are there people who tend to reach you via particular media? Do you think this works well? Why or why not?*
15. *How does being available via multiple technologies affect the way you communicate/explain things, such as yourself or your actions?*
16. *How quickly do you have to respond to incoming messages?*
17. *Do you ever feel that you cannot reach some person within the company?*
18. *Do you ever feel that you cannot find information needed for your job?*
19. *To what extent do you believe your work impacts your ability to balance work and personal responsibilities?*
20. *Do you feel that you are stressed from the workload you need to handle? What do you do when you are overloaded with communication and you need to get your work done*

E) Interruptions

21. *Are there ever times when you just don't want to interact with any other people at all? Do you do anything to reduce your contact with others? Can you get offline?*
22. *To what extent are you frustrated due to the number of online meetings you must participate in?*
23. *How often do you feel pressure because meetings take you away from your work?*
24. *To what extent do you feel interrupted when colleagues talk with you?*

25. *How often do your colleagues' conversations with you take you away from your work?*
26. *Do you feel overwhelmed by the number of tools you have available?*

To what extend do other things going on in your work environment such as background noise distract you?

F) Organisational identification

28. *If you had to describe the culture of [the organisation] in three words, what would you say?*
29. *What are the things about [the organisation] that should never be changed? What do you love best about [the organisation]'s culture?*
30. *Would you be able to say what are the organisational values and how you contribute to these with accomplishing your work?*

_____

Figure A1: Interview protocol sample

Sample of Consent form

The participants were asked for their consent before the interview started. There is an example below in Figure A2:

_____

Before we begin, I need to mention a couple of formalities about this interview. I am working Dr. John Baptista and Dr. Jimmy Huang at the University of Warwick Business School and my gatekeeper in [Redco] is […]. I am working on my PhD thesis and mainly analysing the collaborative practices in [Redco], the usage of various digital media and how it impacts on employee's practice.

All of your responses will remain confidential. I will aggregate information from many individuals to develop my research conclusions. Neither you personally nor your organisation will be identified in any of my research project. I will protect your identity in any reports that are provided as feedback to your organisation.

With your agreement, I would like to tape record this interview. For this reason, I ask that you try to avoid naming specific individuals associated with your organisation. Remember that your participation is voluntary and you are free to not answer any question that does not fit your circumstances or that you feel is inappropriate; you may also withdraw from the interview at any time. Are you happy to begin with the interview?

_____

Figure A2: Consent form agreement

Sample of transcribed interview

The next figure A3 shows the example of the transcribed interview.

Interviewee A09 (IT Manager, Redco France)

Interviewer: Do you use email via [enterprise social media platform] or do you have Outlook running separately? #00:11:55-2#

Interviewee: I have a mix of both. So we still have messaging through first party clients and it can be Outlook or anything else through that matter. I have the integration of Exchange (MS Exchange) built into WebEX social through a customized mechanism. Now, I don't know how familiar you are with WebEX social, but there is an application …, which allows you to build into WebEX social a frame for any type of webpage, right? And so I have this set to connect to the Outlook Web Access which allows me to basically integrate it into a certain way my e-mail amongst all my messaging system into WebEX social. Right? And again, the messaging part, it is planned for the future releases of the WebEX social product…. #00:13:07-2#

Interviewer: Meaning that you would receive your e-mails as a message within WebEX social as you would receive all the other posts? #00:13:14-5#

Interviewee: Yes, exactly. #00:13:17-4#

Interviewer: Interesting. Just as a curiosity, because I of course have seen WebEX social, but I never really had a hands-on experience. When you open up your browser, do you have to log in into the platform, or is it like that your password stored, or is it authenticated by your laptop, or how does it work? #00:13:42-9#

Interviewer: What do you think triggered the introduction of the WebEX social project at [Redco] or what was the demand, which fostered the idea? #00:14:30-8#

Interviewee: Well, I think there are two dimensions to that. One was the way that we do business today, which has changes dramatically, significantly. If you think about the way that we are structured at [Redco], we are a very distributed workforce, which means that we work across time zones and across theaters, regions, countries. But also we, you know, we were not workstation anchors, which means that we are not specifically isolated and not specifically attached to the specific work location. I can start up my work from home, continue from the office, go to a customer and come back home and still be connected throughout the day, right? So that's kind of the evolution that we have experienced at [Redco] and which is true to the entire industry. But the way that we work has changed and it's not so much a place where you actually go but it's more of composed of little kind of work moments, which are not necessarily attached to a specific location. So if you put that into context and you think of that the way that you actually share information, it is very difficult to be attached to email only for instance as a vehicle to communication to collaborate. And so I think more and more, you know with the trends of being connected through different kinds of devices and different kinds of environments, the ability to actually have a two-way you know synchronous type of communication became apparent and became a really necessity at [Redco] as well. Certainly when you actually are part of a larger virtual team and you work for a specific project - if I happen to go on holiday, and I am you know a program manager for instance for a bigger picture program, does that mean that everything is on hold for two weeks or three weeks or whatever? I don't think that any company can afford that kind of model today. And so I think that is what actually triggered, or one of the reasons why this has started: it's how can we build and environment, an architecture which allows for this active collaboration with specific rich media capabilities associated to it. Right? With presence information, with video capabilities, which voice capabilities, with central repositories for documents to be held instead of having someone holding one file that you need the next day on their hard drive on their computer, right? Then it crashes, what happens then. So all of these source, and I'm probably stating the obvious here, but I think that is one of the reasons. #00:17:54-1#

Figure A3: Example of transcribed interview

Example of memos

The next figure A4 shows the example of a memo.

Interviewee A06 (IT Business Relationship Manager for Benelux, Scandinavia, Baltics; Redco UK)

Focusing on the use of different tools, how it is used in collaboration versus routine work. The interviewee also explains the corporate culture and provides insights. The main highlights of the interview are summarized below.

- 3 ways of using WebEX social:
    - o Communication
        - Engagement with clients
        - Rich media
    - o Team collaboration
        - Collective information
        - Collective knowledge
    - o Meet customers
- Internal usage vs external position
- 2 dimensions of motivation
    - o How they do business today / distributed workforce
    - o Trends of technology / new generation employees
- Corporate Culture
    - o „Big" Corporate Culture
    - o Corporate responsibility
    - o WebEX social - chance to express themselves
- Different tone in collaboration
- Quality of communication
- Work practice:
    - o Mail is for this, [enterprise social media] post is for general sharing, bla is that, so on....
    - o Change of use of e-mail
- „Facebook generation"
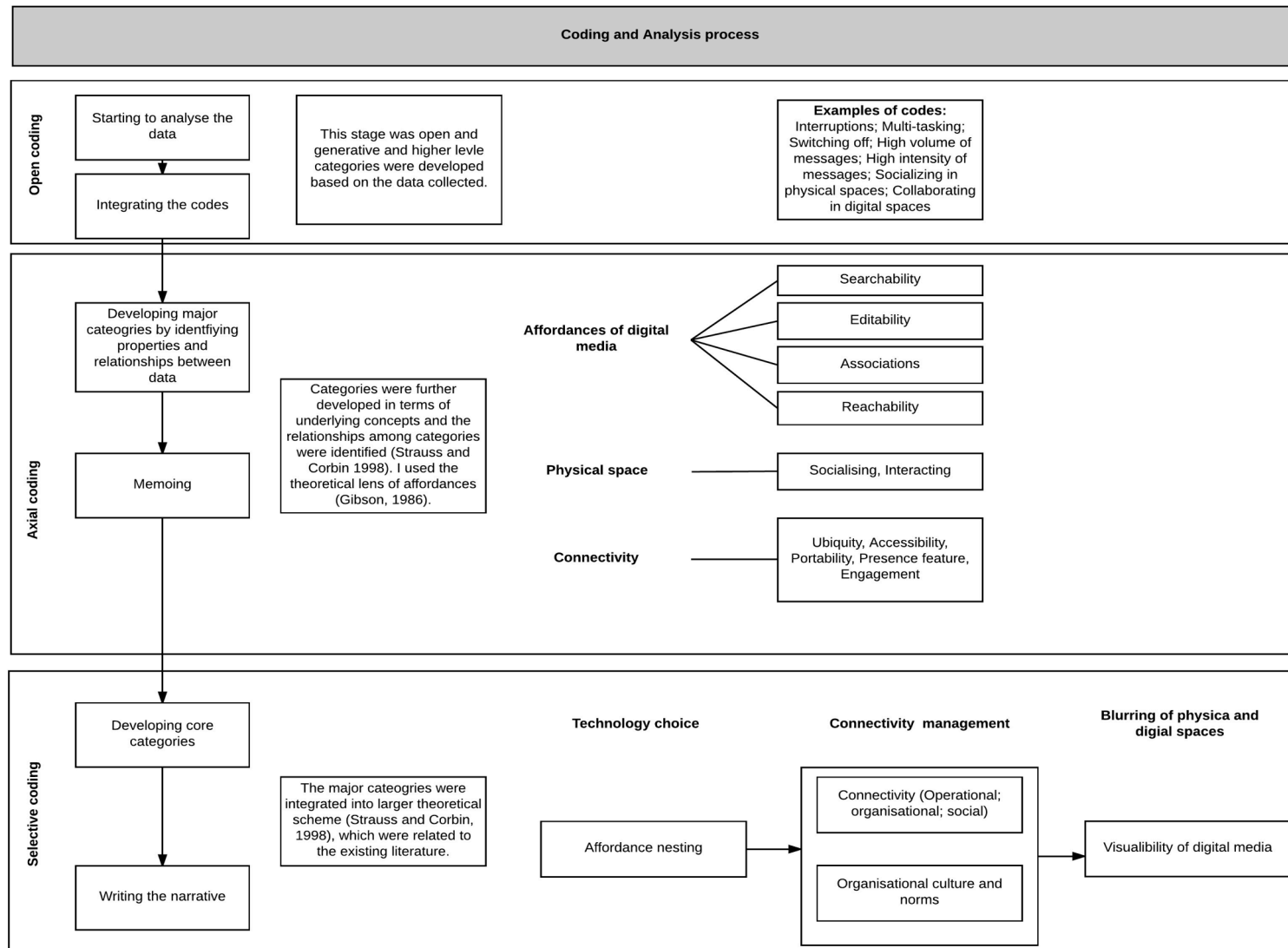
Figure A4: Example of a memo

Data collection

As a primary source of collecting data I conducted semi-structured interviews and selected key participants in the organisation that were willing to be involved in the project. These participants are mentioned in Table A1, which summarizes the interviewee details, and its demographics. All together I conducted 37 interviews.

Respondent	Position	Country	Gender	Interview method	Role
A01	IT Leader EMEA	Germany	Male	Face-to-face	Manager
A02	Project Manager for [Redco] IT	UK	Female	Webex	Mid-manager
A03	Collaboration Solutions and Functional Architect	UK	Female	Webex	Manager
A04	HR Representative	Germany	Female	Face-to-face	Mid-manager
A05	Senior Director for IT	UK	Female	Webex	Manager
A06	IT Business Relationship Manager for Benelux, Scandinavia, Baltics	UK	Male	Webex	Manager
A07	CIO European Markets	UK	Male	Webex	Manager
A08	Senior Vice president, IT Communication and Collaboration	UK	Female	Webex	Manager
A09	IT Manager	France	Male	Webex	Manager
A10	IT Manager for Europe, Africa, Russia, Middle East	UK	Male	Webex and Face-to-face	Manager
A11	IT Analyst	UK	Male	Webex and Face-to-face and Shadowing	Front line graduate

A12	Senior Duty Manager	UK	Male	Webex	Mid-manager
A13	IT Analyst	UK	Female	Webex and Face-to-face and Shadowing	Front line graduate
A14	Communication and Collaboration IT support	UK	Male	Face-to-face	Front line employee
A15	IT Project Manager	UK	Male	Face-to-face	Mid- manager
A16	Service Management Team	UK	Male	Face-to-face	Front line graduate
A17	Software Engineer	UK	Male	Face-to-face	Front line employee
A18	IT Analyst/part-time/e-store	UK	Male	Face-to-face	Front line graduate
A19	System coordinator	UK	Female	Face-to-face and Shadowing	Front line employee
A20	Software manager/IOS Specialist	UK	Female	Face-to-face and Shadowing	Front line employee
A21	IT analyst	India	Female	Webex	Front line graduate
A22	Regional lead for Redco	Slovakia	Male	Webex	Manager
A23	Executive administrative assistant	UK	Male	Face-to-face	Front line employee
A24	Analyst	Dubai	Female	Webex	Front line graduate
A25	Program manager	UK	Female	Face-to-face	Mid- Manager
A26	Administrator at Redco systems	UK	Male	Face-to-face	Front line employee

A27	IT Analyst	UK	Male	Face-to-face	Front line graduate
A28	IT manager in the Unified communication team	UK	Male	Face-to-face	Manager
A29	Business Relationship Manager for IT	UK	Male	Face-to-face	Mid-manager
A30	Product Sales Specialist	UK	Male	Face-to-face	Front line employee
A31	IT Engineer	UK	Male	Face-to-face	Front line employee
A32	[Redco] IT Project Manager	UK	Male	Face-to-face	Mid-manager
A33	Communication, Collaboration IT Team	UK	Male	Face-to-face	Front line graduate
A34	Business Relationship Manager for IT	UK	Male	Face-to-face	Manager
A35	IT Service Lead	UK	Female	Face-to-face	Front line employee
A36	Business Analyst	USA	Male	Webex	Front line graduate
A37	Communication Manager	UK	Female	Face-to-face	Mid-Manager

Table A1: Interviewee demographics

Coding and Analysis process

Open coding

Starting to analyse the data

Integrating the codes

This stage was open and generative and higher levle categories were developed based on the data collected.

Examples of codes:
Interruptions; Multi-tasking; Switching off; High volume of messages; High intensity of messages; Socializing in physical spaces; Collaborating in digital spaces

Axial coding

Developing major cateogries by identfiying properties and relationships between data

Memoing

Categories were further developed in terms of underlying concepts and the relationships among categories were identified (Strauss and Corbin 1998). I used the theoretical lens of affordances (Gibson, 1986).

Affordances of digital media
- Searchability
- Editability
- Associations
- Reachability

Physical space — Socialising, Interacting

Connectivity — Ubiquity, Accessibility, Portability, Presence feature, Engagement

Selective coding

Developing core categories

Writing the narrative

The major cateogries were integrated into larger theoretical scheme (Strauss and Corbin, 1998), which were related to the existing literature.

Technology choice — Affordance nesting

Connectivity management
- Connectivity (Operational; organisational; social)
- Organisational culture and norms
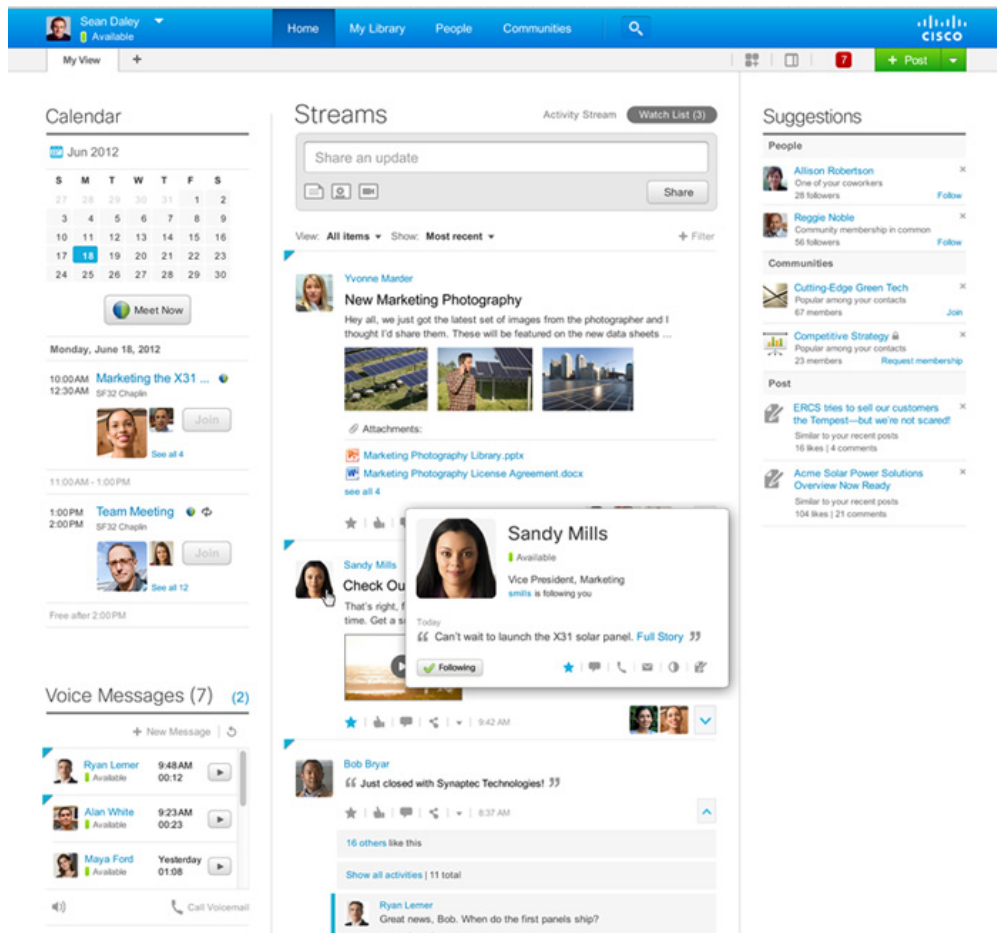
Blurring of physica and digial spaces — Visualibility of digital media
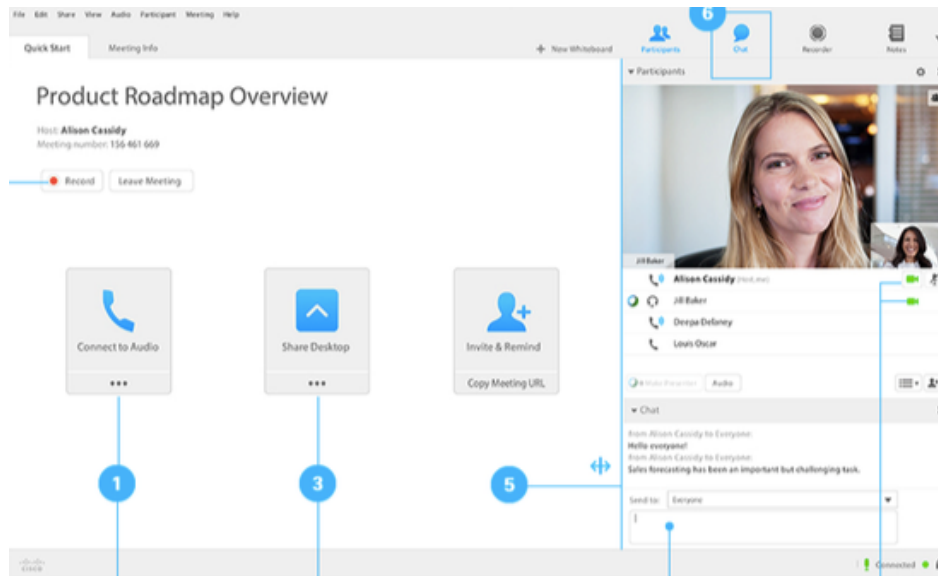
Appendix B

Overview of digital media in Redco

The print screen of the enterprise social media platform is shown in pictures B1, B2 and B3, followed by pictures of other digital media found in Redco.

Picture B1: The main page of WebEX social, Enterprise social media platform

Picture B2: Connecting to a meeting

Picture B3: The visibility and profile information

Picture B4: Portable Teleconference unit

Picture B5:Live broadcasting room

Picture B6: Videoconferencing unit

Picture B7: Stationary Telepresence

Picture B8: Conference room with immersive Telepresence

Appendix C

Papers presented at the academic conferences

Paper 1: Kadnarova, R. Baptista, J. Kotlarsky, J. Lloyd, S. (2012) Media Choice in Modern organisations: Understanding the use of synchronous media for communication in a global IT company. ECIS Barcelona 2012.

Abstract. The importance of face-to-face communication in collaborative projects is well understood in the literature. However, many organisations, and even governments are increasingly pushing for greater use of synchronous media such as video-conferencing to replace face-to-face meetings to drive costs down, reduce carbon footprint and improve efficiency. This calls for a review of existing theories that explain the way in which employees choose media to communicate and collaborate. Our study firstly reviews existing theories and identifies how individuals respond to new demands for greater use of synchronous media in organisations. We then present the findings from a qualitative case study in a global IT company, where we analysed the drivers and use of synchronous technology across various areas of the business. We conclude that existing theories only partially explain the way in which employees choose media in modern organisations and propose a new set of factors to encourage and support further research in this area.

Key words: media choice, synchronous communication technologies, information richness, globally distributed and virtual teams

Paper 2: Kadnarova, R. Baptista, J. Huang, J. (2014). How does connectivity happen? A study of technological affordances in a multinational IT organisation. EGOS Rotterdam 2014.

Abstract. The growing adoption of digital media within organisations is redefining the landscape of where and how work happens. Moving and "navigating" across digital and physical spaces is now inherent to daily routines and work practices of employees. Our research characterises this new way of working and conceptualises it as "digital nomadism". The paper first reviews key streams of activities inherent to digital nomadic work including collaboration, connectivity and coordination. It then reviews the affordances of digital media underpinning this new way of working. We draw theoretically from the literature on connectivity, affordance and nomadic work. Using a single qualitative interpretive case study the paper explains the digital nomadic practices in a multinational IT organisation in the UK. Findings suggest that digital nomads manage their connectivity through the different states and use various digital media to connect to their colleagues, information or be organisationally connected. Our main contribution is in the literature of connectivity, showing how digital media supports different states of connectivity (tool, operational, and organisational), and in theorising how digital media and physical affordances shape and support digital nomadic practice.

Key words: digital nomads, connectivity, digital media, digital work, affordances